

T H E  
ART and MYSTERY  
O F  
VINTNERS  
A N D  
Wine-Coopers:  
Or, a Brief  
DISCOURSE  
Concerning the various Sicknesses and Corruptions of  
W I N E S,

And their respective Remedies; also approved  
Directions for the Conserving and Curing all  
Sorts of Wines; whether *Spanish, Greek,*  
*Italian, Portugal or French,* very necessary  
for all People. Delivered to the *Royal Society,*  
by one that served two Apprenticeships to a  
Vintner, in the City of *London.*

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L O N D O N:

Sold by J. CLARKE, at the *Golden Ball* in *Duck Lane,* near  
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THE  
ART AND MYSTERY

OF  
VINTNERS

AND  
WINE-DOCTORS:

OR  
DISCOURSE

WINE

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## *The Mystery of* VINTNERS.

**E**Vidence (you all know) is the life of Truth, and Method the life of Discourse; the former being requisite to convince the understanding, the latter, to facilitate the searches of it. In this short accompt, therefore, of my Collections and Observations concerning Alterations of Wines, both Natural and Artificial, which according to your command I now bring to you, I am obliged to use plainness and order: this to avoid confusion, that, lest I increase the obscurity of my Subject.

My Argument then, I divide into four Parts, to which as to Generals or Heads, all considerables thereunto belonging seem naturally to refer themselves. Of these

The *First* is, the Natural Purification or Clarification of Wines, whereby of themselves they pass from the state of Crudity and Turbulency, to that of Maturity; by degrees growing clear, fine and potable.

The *Second*, the unseasonable Workings, Frettings and other Sickneses, to which, from either internal or external Accidents, they are afterward subject.

The *Third*, their state of Declination or Decay, wherein they degenerate from their Goodness and Pleasantness, becoming Pall'd, or turning into Vinegar.

The *Last*, the several Artifices used to them, in each of these States or Conditions.

In the first of these Heads, *viz.* The Natural Clarification of new Wines, two things occur, not un-

worthy consideration ; the manner how, and the cause by which the same is effected.

As for the Manner, give me leave to observe, that Wine, while yet in the Must, is usually put into open Vessels ; the abundance and force of the Spirits, *i. e.* the more subtle and active parts therein contained, being then so great, as not to endure imprisonment in close ones, at which time it appears troubled, thick and feculent : All parts or elements of it being violently commoved and agitated, so that the whole mass of Liquor seems to boyl, like Water in a Cauldron over the Fire. This tumult being in some degree composed, and the *Gas Sylvestre* (as *Hellmont* barbarously calls it) or wilder Spirit sufficiently evaporated ; they then pour the Must into close Vessels, there to be farther defecated, by continuance of the same motion of Fermentation ; reserving the Froth or Flower of it, and putting the same into small Casks, hooped with Iron, lest otherwise the force of it might break them. This Flower thus separated, is what they name *Stum*, either by transposition of the letters in the word *Must*, or from the word *Stum*, which in High-Dutch signifies *Mute* ; because this Liquor (forsooth) is hindred from that Maturity, by which it should speak its goodness and wholesomeness. *Quasi dicas, Vinum mutum, quia nunquam effervuit, vel potius à Belg. Stomp. Teutonice Stompf. hebes, obtusum ; quia scilicet, ob defectum fermentationis, Spiritus, non ut vina astate defecata, puros, vividos & expeditos, sed hebetes & languidos habet.* This done, they leave the rest of the Wine to finish its Fermentation ; during which it is probable, that the spiritual parts impell and diffuse the grosser and feculent up and down, in a confused and tumultuous manner, until all being disposed into their proper Regions, the Liquor becomes more pure in Substance, mal. &c. transparent to the Eye, more piquant and gust-  
ful



ful to the Palate, more agreeable to the Stomach, more nutritive to the Body.

The impurities thus separated from the Liquor, are, upon Chymical Examinations, found to consist of Salt, Sulphur (each of which is impregnate with some Spirits) and much Earth. Which being now dissociated from the purer Spirits, either mutually cohere, co-agulate and affix themselves to the sides of the Vessel, in form of a stony Crust, which is called Tartar and Argol; or sink to the bottom in a muddy Substance, like the Grounds of Ale or Beer, which is called the Lees of Wine. And this in short I conceive to be the process of Nature in the Clarification of all Wines, by an orderly Fermentation.

As for the principal Agent, or efficient Cause of this operation, I perswade my self, you will easily admit it to be no other but the Spirit of the Wine it self. Which, according to the Mobility of its nature, seeking after liberty, restlessly moving every way in the Mass of Liquor, thereby dissolves that common tie of Mixture, whereby all the Heterogeneous parts thereof were combined and blended together; and having gotten it self free, at length abandons them to the tendency of their gravity and other Proprieties. Which they soon obeying, each kind consorts with their like, and betaking themselves to their several Places or Regions, leave the Liquor to the possession and government of its noblest Principle, the Spirit. For, this Spirit as it is the life of the Wine, so doubtless it is also the cause of its Purity and Vigor, in which the perfection of that life seems to consist. ¶

From the natural Fermentation of Wines we pass to the Accidental, from their State of Soundness, to that of their Sickness; which is our second General Head. We have the Testimony of daily Experience, that many times even good and generous Wines are invaded by unnatural and sickly commotions, or (so

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Speak in the dialect of Wine-Coopers) Workings; during which they are turbulent in Motion, thick of Consistence, unsavory in Taste, unwholsome in Use, and after which they undergo sundry Alterations to the worse.

The Causes hereof may be either Internal or External.

Among the Internal, I should assign the chief place to the excessive quantity of *Tartar*, or of *Lees*; which containeth much of Salt and Sulphur (as hath already been hinted) continually send forth into the Liquor abundance of quick and active particles, that like Stum or other adventitious Ferment, put it into a fresh Tumult or Confusion: Which if not in time allayed, the Wine either grows Rank or Pricking, or else turns Sour; by reason that the Sulphur, being overmuch exalted over the rest of the Elements or Ingredients, predominates over the pure Spirits, and infects the whole Mass of Liquor with sharpness or acidity; or else it comes to pass, that the Spirits being spent and flown away, in the commotion, and the Salt dissolv'd and set afloat, obtains the mastery over the other similar parts, and introduceth Rankness or Ropiness. Yea, tho' these Commotions chance to be suppressed before the Wine is thereby much depraved; yet do they always leave such evil impressions, as more or less alienate the Wine from the goodness of its former state, in Colour, Consistence and Taste. For hereby all Wines acquire a deeper Tincture, *i. e.* a thicker body or consistence; Sacks and White Whines changing from a clear White to a cloudy Yellow, and Claret losing its bright Red for a dusky Orange Colour, and sometimes for a Tawny. In like manner they degenerate also in Taste, and affect the palate with foulness, roughness, and rancidity very unpleasant.

Among the External, are commonly reckoned the too frequent, or violent motion of Wines, after their  
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settlement in their Vessels; immoderate Heat, Thunder or the report of Cannons, and the admixture of any exptick body, which will not symbolize or agree, and incorporate with them, especially the flesh of Vipers, which I have frequently observed to induce a very great Acidity upon, even the sweetest and fullest bodied Malago and Canary Wines. Yet, under favour, I should think all these foreign Accidents to be rather Occasions than Causes of the evil Events that follow upon them; because these Events seem to arise immediatly and principally from the commotion and diffusion of the Sulphureous, or Saline impurities formerly separated from the Liquor, and kept in due subjection by the genuine and benign Spirits. But this is no place, nor is it my inclination, to insist upon nicety of Terms, which might indeed start matter of subtle speculations, but can afford little or nothing of profit to our present Enquiry. Which brings us in the next place to our

Third, previous considerable, viz. the Palling or Flattning of Wines, and their declination toward Vinegar, before they have attained to the State of Maturity and Perfection. Of this the grand and proxim Cause seems to be their Jejuneness and poverty of Spirits, either Native, or Adventitious.

Native, when the Grapes themselves are of a poor and hungry kind, or gathered unripe, or nipt by early Frosts, or half starved in their growth, by a dry and unkindly season, &c.

Adventitious, when the Liquor, rich perhaps and generous enough at first, comes afterward to be impoverished by loss of Spirits, either by Oppression, or by Exhaustion

The Spirits of Wine may be oppressed, when the quantity of impurities, or dregs with which they are combined, is so great, and their Crudity, Viscosity and Tenacity so Contumacious, that they can

neither overcome them, nor deliver themselves from their Adhæſion; but are forced to yield to the obſtinacy of the matter on which they ſhould operate, and ſo to remain unactive and clogg'd. As may be exemplified in the courſe Wines of *Moravia*; which by reaſon of their great Auſterity and Roughneſs, ſeldom attain to a due exaltation of their Spirits, but ſtill remain Turbulent, Thick, and in the State of Crudity; and therefore eaſily Pall, in which reſpect they are condemned by ſome German Phyſicians, and more expreſſly by *Sennertus* (*lib. de Scorbut. cap. 2.*) as infamous for generating the Scorbut, and adminiſtring matter for the Stone and Gout, they yielding more of Tartar than any other Wines.

*Crato* (*conſil. 10.*) *tot in Moravia Colicos & Paralyticos fieri non aliam ob rationem exiſtimat, quam quod vina Moravica noxia ſunt: & Cardanus* (*conſilio pro dolore vago*) *cuiſdam Colici dolores quadriennis meminit, non ventrem ſolum & peſtinem, ſed etiam peſtus, dorſum & cervicem cum palpitazione ingenti, torquentis cujus originem petit à vini acerbi & auſteri potu. Vide etiam Levin. Lemn de occult. natur. miraculis, Lib.1. cap.15. & Citeſium de Colico dolore Piſtenico, cap. 4.*

The Spirits of Wine may be exhausted or conſumed either ſuddenly, or by degrees. Suddenly, by Lightning; which doth ſpoil Wine (as I conceive, at leaſt) not by Congelation or Fixation of its Spirits; for, then ſuch Wines might be capable of Reſtoration, by ſuch means as are apt to reinforce and volatilize the Spirits again, contrary to what hath been found by Experience; but perhaps by Diſgregation and putting them to flight, ſo as to leave the Liquor Dead, Pall'd, and never to be revived by any new ſupply. By Degrees, two ways, viz. by unnatural Fermentation, of whoſe evil effects ſomething hath already been ſaid, or by Heat from without; of which we have an inſtance in the making of Vinegar. Which commonly is done by ſetting the Veſſels of Wine

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Wine against the hot Sun ; which beating upon the Mass of Liquor, and rarefying the finer parts thereof, gives wings to the fugitive Spirits to fly away together with the purer and more volatil Sulphur, leaving the remainder to the dominion of the Salt, which soon debaseth and infecteth it with Sourness. This being the common manner of turning Wine into Vinegar, and practised (for ought I could ever learn to the contrary) in all Ages, and all Countries ; I make a doubt, whether Spirit of Wine may be drawn out of Vinegar, notwithstanding it hath been delivered as practicable, even by the grave and learned *Sennertus* himself, in *lib. de consens. Chymicor. cum Galen.* and heartily wish you would be pleased to resolve that my doubt, by some Experiment of your own.

The times of the Year when Wines are observed to be most prone to Ferment and Fret, and then to grow Qually (as they call it) that is turbulent and foul, are *Midsummer* and *Alhallontide*: when our Vintners use to rack them from their gross Lees, especially *Renish*, which commonly grows sick in *June*, if not rack'd ; and they chuse to do it in the wane of the Moon, and fair Weather, the Wind being Northerly. ¶

Having thus succinctly recounted the most remarkable Distempers of Wines, guessed at their respective Causes, and touched upon the times ; it is seasonable for me to proceed to their usual Remedies, such at least as I have been able to collect from Wine-coopers and Vintners ; which is the fourth and last part of my Argument.

To begin therefore with some of the Artifices used to Wines when yet in Must ; it is observable, that altho' to the raising a Fermentation in them, at that time, there be not so much need of any additional Ferment, as there is in the wort of Ale, Beer, Hydromel, Metheglin, and other sorts of drinks familiar



miliar to us in *England* ; because the Juice of the Grape is replenished with generous Spirits sufficient of themselves to begin that work ; yet it is usual in some Countries to put quick Lime either upon the Grapes when they are Pressing, or into the Must, to the end that by the force and quickness of its Saline and fiery Particles, the Liquor may be both accelerated and assisted in working. For the same reason perhaps it is, that the *Spaniards* mix with their Wines, while they are yet flowing from the Press, a certain thing they call *Gieffo*, which I guess to be a kind of *Gypsum* or Plaster ; whereby the Wines are made more durable, of a paler Colour and more pleasant Taste : Others put into the Cask shavings of Firr, Oak or Beech, for the same purpose, and others Vinegar.

Again, tho' the first Fermentation succeeds generally well, so that the whole Mass of Liquor is thereby delivered from the gross Lee ; yet sometimes it happens, either through scarcity of Spirits at first, or through immoderate cold, that some part of those impurities remain confused and floating therein. Now in this Case, Wine-Coopers put into the Wine certain things to hasten and help its Clarification ; such as being of gross and viscous parts, may adhere to the floating Lee, and sinking carry it with them to the bottom ; of which sort are Isinglass and the whites of Eggs, or such as meeting with the grosser and earthly particles of the Lee, both dissociate, and sink them by their gravity ; of which kind are the Powders of *Alabaster*, calcin'd *Flints*, white *Marble*, *Roch Alum*, &c.

The Clarification of *Hippocras* is usually expedited by putting into it new Milk, which after a short space of time separates and sinks of it self, carrying with it the Powders of the Spices and grosser parts of the Wine ; after the manner of things that clarify Liquors by way of *Adhesion*.

The Grecians at this day have a peculiar way of spurring Nature, and causing her to mend her pace, in fining and ripening their strongest and most generous Wines; and it is by adding to them, when they begin to work, a proportionate quantity of *Sulphur* and *Alum*; not (as I think) to prevent their fuming up to the head and inebriating, according to the conjecture of that great Man, the Lord St. *Albans*, in his *Nat. Hist.* For, notwithstanding this mixture, they cause Drunkenness as soon, if not sooner than other Wines; nor are Men intoxicated by the vapors of Wine flying up immediatly from the stomach into the Brain; but only to excite and promote their Fermentation, and hasten their Clarification ensuing thereupon; the *Sulphur* perhaps helping to attenuate and divide those gross and viscid parts, wherewith Greek Wines abound; and the *Alum* conducing to the speedier precipitation of them afterward. And it is reported by a learned Traveller (*Zimar. in Antr. Magic. Medic. T. 1. Lib. 7. p. 510.*) that some Merchants put into every Pipe of their Greek Wine, a Gill or thereabouts of the Chymical Oyl of *Sulphur*, in order to the longer preservation of it clear and sound. Which tho' I easily believe, because the Acid Spirit of *Sulphur* is known to resist Putrefaction in Liquors; yet I should decline the use of Wines so preserved, unless in time of Pestilential infection; remembring that old distich.

*Qui bibit ingrato fœdatum Sulphure Bacchum,*

*Præparet ad diri se Phlegetontis aquam.*

Of always of hastening the Clarification and Ripening of new Wine, none seems to me to be either more easie, or more innoxious than that borrowed from one of the Ancients by the Lord Chancellor *Bacon*, and mentioned in his *Sylva Sylvarum. Centur. 7. Experim. 679.* Which is by putting the Wine into Vessels well stopped, and letting it down into the Sea. Hence I am apt to derive the use of that Antique



tique Epithet given to Wine thus ripened, *Vinum Thalassites*.

But how shall we reconcile this Experiment to that common practice of both the Ancients and Moderns of keeping Wine in the Must a whole Year about, only by sinking the Cask for 30 or 40 days in a Well or deep River? That the use hereof is very Ancient, is manifest from that discourse of *Plutarch's* (*Question. Natur. 27.*) about the efficacy of Cold upon Must, whereof he gives this Reason: That Cold not suffering the Must to Ferment, by suppressing the activity of the Spirits therein contain'd, conserveth the sweetness thereof a long time. Which is not improbable, because experience teacheth, That such who make their Vintage in a rainy Season, cannot get their Must to Ferment well in a Vault, unless they cause great Fires to be made near the Casks; the rain mixed with the Must, together with the ambient Cold, impeding the motion of Fermentation, which ariseth chiefly from Heat.

That the same is frequent at this day also, may be collected from what Noble Mr. Boyle hath been pleased to observe in his incomparable *History of Cold*, on the relation of a *Frenchman*, viz. That the way to keep Wine long in the Must (in which state the sweetness makes many to desire it) is to tun it up immediatly from the Press, and before it begins to work, to let down the Vessels, closely and firmly stopped, into a Well or deep River, there to remain for 6 or 8 Weeks. During which time, the Liquor will be so confirmed in its state of Crudity, as to retain the same, together with its sweetness, for many Months after, without any sensible Fermentation.

But (as I said) how can these two so different Effects, the *Clarification of new Wine*, and the *Conservation of Wine in the Must*, be derived from one and the same Cause, the Cold of the Water? without much difficulty, as I conjecture. For, it seems not

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unreasonable, that the same Cold, which hinders Must from Fermenting, should yet accelerate and promote the Clarification of Wine after Fermentation; in the first, by giving check to the Spirit before it begins to move and act upon the crude Mass of Liquor, so that it cannot in a long time after recover strength enough to work; in the latter, by keeping in the pure and genuine Spirit, otherwise apt to exhale, and rendring the flying Lee more prone to subside, and so making the Wine much sooner clear, fine and potable. And thus much concerning the helps of New Wine. ¶

For the *Preternatural*, or sickly commotions incident to Wines after their first Clarification, and tending to their impoverishment or decay; the general and principal Remedy is Racking, *i. e.* drawing them from their Lees into fresh Vessels. Which yet being sometimes insufficient to preserve them, *Vintners* find it necessary to pour into them a large quantity of new Milk, as well to blunt the sharpness of the Sulphureous parts now set afloat and exalted, as to precipitate them and other impurities to the bottom, by adhesion: But taught by experience, that by this means the Genuine Spirits of the Wine also are much flatted and impaired; (for, the Lee, tho' it makes the Liquor turbid, doth yet keep the Wine in heart, and conduce to its duration) therefore, lest such Wines should Pall and die upon their hands, as of necessity they must, they draw them forth for sale as fast as they can vent them.

For the same Disease they have divers other Remedies, particularly accommodated to the nature of the Wine that needs them. To instance in a few.

For *Spanish* Wines disturbed by a Flying-Lee, they have this receipt. Make a Parell (give me leave to use their Phrase) of the *Whites of Eggs, Bay Salt, Milk and Conduit Water*, beat them well together in a convenient Vessel, then pour them into the Pipe of  
Wine

Wine (having first drawn out a gallon or two, to make room) and blow off the froth very clean. Hereby the tumult will in 2 or 3 days be Recomposed, the Liquor Refined, and the Wine drink Pleasantly, but will not continue to do so long; and therefore they counsel to rack it from the Milky bottom, after a weeks settlement, lest otherwise it should drink foul, and change colour. And this,

If your *Sacks* or *Canary Wines* chance to boyl over, draw off 4 or 5 Gallons; then putting into the Wine 2 Gallons of *Milk* from which the Cream hath been skimm'd; beat them till they be thoroughly commix'd, adding a penny-worth of Roch Alum, dryed in a Fire-shovel, and beaten to Powder, and as much of white Starch: After this, take the whites of 8 or 10 Eggs, a handful of Bay-salt, and having beaten them together in a Tray, put them also into the Wine, filling up the Pipe again, and letting the Wine stand 2 or 3 days; in which time, the Wine will recover to be fine and bright to the Eye, and quick to the Taste; but be sure you draw it off that bottom soon, and spend it as fast as you can.

For Claret in like manner distempered with a Flying-Lee, they have this Artifice.

They take two pound of the Powder of Pebble Stones, bak'd in an Oven, the whites of 10 or 12 Eggs, a handful of Bay-salt, and having beaten them well together in two Gallons of the Wine, they mix them with that in the Cask; and after 2 or 3 days draw off the Wine from that bottom.

The same Parell serves also for *White Whines* upon the Frett, by the turbulency and rising of the Lee.

To cure *Rhenish* of its Fretting (to which it is most Prone a little after *Midsummer*, as was before observed) they seldom use any other Art, but giving it vent, and covering the open Bung with a Tile or Slate; from which they are careful to wipe

the Filth purged from the Wine by Exhalation; and after the Commotion is by this means composed, and much of the fretting matter cast forth, they observe to let it remain quiet for a Fortnight or thereabout, and then rack it into a fresh Cask, newly fumed with a Sulphurate Match, call'd in Latin *Tela Sulphurata*, in High Dutch *Ein Schlag*. ¶

As for the various Accidents, that frequently ensue and vitiate Wine after those forementioned Reboylings, notwithstanding their suppression before they were incurable; you may please to remember, I referr'd them all to such as alter and deprave Wines either in Colour, or Consistence, or Taste, or Smell. Now for each of these Maladies our Vintners are provided of a Cure, in particular,

To restore *Spanish* and *Austrian* Wines grown Yellow or Brownish, they add to them sometimes Milk alone, sometimes Milk and Isinglass well dissolved therein, sometimes Milk and white Starch; by which they force the exalted Sulphur to separate from the Liquor, and sink to the bottom; so reducing the Wine to its former clearness and whiteness. The same effect they produce with a composition of *Flower de-luce* Roots, and Salt-petre, Ana, 4 or 5 Ounces; the whites of 8 or 10 Eggs, and a competent quantity of common Salt, mixt and beaten in the Wine.

To amend Claret decayed in Colour, first they rack it upon a fresh Lee, either of Alicant or Red Bourdeaux Wine; then they take 3 pound of Turnsole, steep it all Night in 2 or 3 Gallons of the same Wine, and having strained the infusion through a Bag, pour the Tincture into the Hogshead (sometimes they suffer it first to fine it self in a Rundlet) and then cover the Bung-hole with a Tile, and so let it stand for 2 or 3 days; in which time the Wine usually becomes well-coloured and bright.

Some use only the Tincture of *Turnsole*.

Others

Others take half a Bushel of full ripe Elder Berries, pick them from their Stalks, bruise them, and put the strain'd juice into a Hoghead of discoloured Claret; and so make it drink Brisk, and appear Bright.

Others, if the Claret be otherwise sound, and the Lee good, overdraw 3 or 4 Gallons; then replenish the Vessel with as much good Red Wine, and rowl him upon his Bed, leaving him reversed all Night: Next Morning turn him again, so as the Bung-hole may be uppermost, which stopr, they leave the Wine to Fine. But in all these Cases they observe to set such newly recovered Wines abroach, the very next day after they are fined, and to draw them for sale speedily.

To correct Wines faulty in Consistence; *i. e.* such as are Lumpish, Foul, or Ropy; they generally make use of the Powders of burnt Alum, Lime, Chalk, Plaster, Spanish White, Calcined Marble, Bay-Salt, and other the like Bodies, which cause a precipitation of the gross and viscid parts of the Wine then afloat. For Example,

For Attenuation of Spanish Wines, that are foul and lumpish; having first rack'd them into a newly scented Cask, they make a Parell of burn'd Alum, Bay-Salt, and Conduit Water; then they add thereto a quart of Bean-Flower, or Powder of Rice, (and if the Wine be also brown and dusky, Milk, otherwise not) and beating all these well together with the Wine, blow off the Froth, and cover the bung with a clean Tile-stone. Lastly, they again rack the Wine after a few days, and put it into a Cask well Scented.

Here perhaps some, not well understanding what is meant by this scenting of Casks, will pardon me if I make a short stand to explain it.

They take of Brimstone 4 Ounces, of burn'd Alum 1 Ounce, of *Aqua Vita* 2 Ounces; these they put together in an Earthen Pan, or Pipkin, and hold them



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them over a Chafing Dish of glowing Coals, till the Brimstone is melted and Runs, then they dip therein a little piece of new Canvas, and instantly sprinkle thereon the Powders of Nutmegs, Cloves, Coriander and Anise seeds. This Canvas they fire, and let it burn out in the Bung-hole, so as the Fume may be received into the Vessel; And this, as I have been credibly informed, is the best scent for all Wines. Nor is it a Modern Invention, both Camerarius (*cap. 8. membr. sect. 23.*) and Levinus Lemnius (*Occult. lib. 2. cap. 48.*) taking notice of the like use among the Ancients, of fuming their Casks with Sulphur. *Ut vasa à putredine defenderentur, vinumq; ipsum majorem calorem, aut Spiritus acriores acquireret.*

To prevent the foulness and ropiness of Wines, the old Roman *Vindemiatores* used to mix Sea-water with the Must; *Ut suo calore, ne Vina lentescerent; pendulaq; fierent, conservaret, & dum pondere suo in vase subsideret, facies secum ad fundum deferret.* Cato de R.R. *cap. 104.* & Langius 2 Epist. 32. & Plin. lib. 2. *cap. 1.*

To cure the Ropiness of Claret, the Vintners as well French as English, have many Remedies, among which I have selected two or three, as most memorable, because most usual.

One is this, First, they give the Wine a Parell, then draw it from the Lee, after the clarification by that Parell; this done, they infuse 2 pound of Turnsole in good Sack all Night, and the next Day putting the strain'd infusion into a Hogshead of the Wine, with a spring Funnel, leave it to fine, and after draw it for excellent Wine.

Another this, They make a Lee of the Ashes of Vine Branches, or of Oaken Leaves, and pour it into the Wine hot, and after stirring leave it to settle. The quantity, a quart of Lee, to a Pipe of Wine.

A Third, is only Spirit of Wine, which put into muddy Claret, serves to the refining it effectually and speedily; the proportion being a pint of Spirit

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to a Hoghead. But this is not to be used in sharp and eager Wines.

When white Wines grow foul and tawny, they only rack them on a fresh Lee, and give them time to fine.

For the Emendation of Wines offending in Taste, Vintners have few other Correctives, but what conduce to Clarification. Nor do they indeed much need variety in the Case; seeing all Unfavouriness of Wines whatever seems to proceed from their impurities set afloat, and the dominion of either their Sulphureous, or Saline parts over the finer and sweeter; which causes are removed chiefly by Precipitation. For, all Clarification of Liquors may be referred to one of these three Causes. 1. Separation of the grosser parts of the Liquor from the finer. 2. The equal distribution of the Spirits of the Liquor, which always rendereth bodies clear and untroubled. 3. The refining of the Spirit it self. And the two latter are consequents of the first, which is effected chiefly by Precipitation, the Instruments whereof are weight and viscosity of the body admixt, the one causing it to cleave to the gross parts of the Liquor flying up and down in it, the other sinking them to the bottom. But this being more than Vintners commonly understand, they rest not in Clarification alone, having found out certain Specificks as it were, to palliate the several vices of Wines in all sorts, which make them disgustful. Of these likewise I shall recite two or three, of greatest use and esteem among them.

To correct Rankness, Eagerness and pricking of Sacks and other sweet Wines. they take 20 or 30 of the whitest Limestones, and slack them in a Gallon of the Wine; then they add more Wine, and stir them together in a Half-tub, with a Parelling staff; next they pour this mixture into the Hoghead, and having again used the Parelling Instrument, leave



the Wine to settle, and then rack it. This Wine I should guess to be no ill drink for gross Bodies and Rheumarick Brains; but hurtful to good Fellows of hot and dry constitutions, and meagre habits.

Against the Pricking of *French* Wines, they prescribe this easie and cheap Composition. Take of the Powder of Flanders Tile 1 pound, of Roch Alum half a pound, mix them and beat them well with a convenient quantity of the Wine, then put them into the Hoghead, as the former.

When their Rhenish Wines Prick, they first rack them into a clean and strongly scented Cask or Vat; then add to the Wine 8 or 10 Gallons of clarified Honey, with a Gallon or two of Skim-milk, and beating all together, leave them to settle.

Sometimes it happens, that Claret loseth much of its Briskness and Picquantness, and in such case they rack it upon a good Lee of Red Wine, and put into it a Gallon of the juice of Sloes or Bullace; which, after a little Fermentation and Rest, makes the Wine drink brisk and rough. The like hath been sometimes done, as I have been told by a Drawer with Virginian Pears, call'd *Meraguesnaux*. Which seems highly probable, because that Fruit is of colour deeply Sanguine, and very austere and rough of Taste, as I observed in some that were given me, some years since.

To meliorate the taste of hungry and too eager White Wines, they draw off 3 or 4 Gallons of the Wine, and infusing therein as many pounds of Malago Raisins, stoned and bruised in a stone Mortar, till the Wine hath sufficiently imbibed their sweetness and Tincture (which it will do in a days time) they run it through an Hippocras Bagg, then put it into a fresh Cask, well scented, together with the whole remainder of the Wine in the Hoghead, and so leave it to fine.

To help stinking Wines, the general Remedy is  
Rack.

Racking them from their old and corrupt Lee. Besides which, some give them a fragrant Smell or Flavour, by hanging in them little Baggs of Spices, such as Ginger, Zedoary, Cloves, Cinnamon, Orras Roots, Cubebs, Grains of Paradise, Spikenard, &c. Aromaticks. Others boyl some of the Spices in a pottle of good sound Wine of the same sort, and tunn up the Decoction hot. Others correct the ill savour of Rank-lee'd *French* wine, with only a few Cinnamon canes hung in them. Others again for the same end use Elder Flowers, and tops of *Lavender*.

Having thus run over three parts of the Vintners Dispensatory, and transcribed many of their principal Secrets for the cure of the acute Diseases of Wines; we are arriv'd now at the fourth, which contains Medicaments proper for their Chronick Distempers, *viz.* Loss of Spirits, and decay of Strength.

Concerning these, therefore is it observable, That as when Wines are in preternatural Commotions, from an excess and predomination of their Sulphureous parts, the grand Medicine is to Rack them from their Lee; so, on the contrary, when they decline and tend toward Palling, by reason of the scarcity of their Spirits and Sulphur; the most effectual Preservative is to rack them upon other Lees, richer and stronger than their own; that being from thence supplied with new Spirits, they may acquire somewhat more of vigour and quickness. I say Preservative, because there is, in truth, no Restoring of Wines after they are perfectly Pall'd and Dead; for, nothing that is past perfection, and hath run its natural race once, can receive much amendment.

But, besides reinforcing of impoverished Wines by new and more generous Lees, there are sundry Confections, by which also as by Cordials, the languishing Spirits of them may be sustained, and to some

some degree recruited. Of which I here bring two or three particular examples.

When Sacks begin to languish (which doth not often happen, especially in this City, where are so many Sack-drinkers) they refresh them with a Cordial Syrup, made of most generous Wine, of Sugar and Spices.

For Rhenish and White wines, a simple decoction of Raisins of the Sun, and a strong scented Cask, usually serve the turn.

For Claret inclining to a Consumption; they prescribe a new and richer Lee, and the shavings of Firr-wood; that the Spirits being recruited by the additional Lee, may be kept from exhaling, by the unctuous substance of the Turpentine. Which artifice I have often observed, at the time of my being at *Paris*, to be used in the most delicate and thin bodied Wines of France; and seems to me, no improbable cause of that exceeding dulness and pain of the head, which always attends upon Debauches made with such Wines, as was noted long since by *Pliny*, who speaking of the same (*lib. 23. cap. 1.*) saith, *novitium resinatam nulli conducit; capitis dolorem & vertigines facit, ab hoc dicta Crapula est, viz. πᾶσι τὸ πᾶσι πᾶσι, quasi dolor caput vibrans.*

Nor is it a Modern Invention, but well known to, and frequently put in use by the old Romans, in times of their greatest Wealth and Luxury. For, *Pliny*, (*Hist. Nat. lib. 14. cap. 2.*) takes singular notice of the custom of the Italian Vintners, in mixing with their Wines Turpentine of several sorts. Some of his Words are these: *Ratio autem condiendi Musta, in primo fervore, qui novem diebus cum plurimum peragitur, aspersu Picis; ut odor vino contingat, & saporis quedam acumina. Vehementius id fieri arbitrantur, crudo flore Resinae, excitariq; lenitatem, &c.* Yea, the *Gracians* long afore had their *Vina Picata & Resinata*; as is evident from the commendation of such Wines by *Plutarch* (*5. Sympos.*

(5. *Sympos. probl. 3.*) and the prescription of them to Women, in some Cases, by our great Master, *Hypocrates* (1. *de Morb. Mulier.*) and were so much delighted with their *Vinum Picites*, that they consecrated the *Pitch* tree to *Bacchus*.

You have heard the sum of what I have my self observed, and what I have transcribed from the Manuscripts of some very skilful Vintners, which I had the good luck to peruse, concerning the Remedies of the various Sickneses, to which Wines are obnoxious.

It remains only, that I entertain your Patience, a Minute or two longer, with a taste of the more disingenuous practices of Vintners, in the Transmutation or Sophistication of Wines, which they call Trickings or Compassings.

They transform poor *Rochel* and *Cogniak* White-wines into *Rhenish*, *Rhenish* into *Sack*; the Laggs of *Sacks* and *Malmfies* into *Muskadels*. They counterfeit Raspy wine, with Flower-de-luce Roots; *verdea*, with decoctions of Raisins; they sell decayed *Xeres*, vulgarly *Sherry*, for *Lusenna* wine: In all these impostures deluding the palate so neatly, that few are able to discern the Fraud, and keeping these *Arcana Lucrifera* so close, that fewer can come to the knowledge of them. So that we may say, as *Pliny* did, in the close of his Chapter touching the Sophistication of Wines in his days; *Tot veneficiiis placere cogitur, & miramur noxium esse vinum?*

As for their Metamorphosis of White into *Clarer*, by dashing it with Red; nothing is more commonly either done or known.

For their conversion of White into *Rhenish*, they have several artifices to effect it, among which this is most usual.

They take a Hogshead of *Rochel*, or *Cogniak* or *Nant* White Wine, rack it into a fresh Cask, strongly scented; then give the white *Parell*, put into it 8 or 10 Gallons of clarified Honey, or 40 pounds of

course

course Sugar, and beating it well, leave it to clarify. To give this mixture the delicate Flavour, they sometimes add a Decoction of *Clary Seeds*, or *Galitricum*; of which Druggs there is an incredible quantity used yearly at *Dort*, where now is the Staple of Rhenish Wines. And this is that Drink, wherewith our English Ladies are so much delighted, under the precious name of Rhenish in the Must.

*The manner of making adulterate Bastard, is this.*

*Recipe*, Four Gallons of White Wine, three Gallons of old Canary, five pounds of *Bastard Syrup*, beat them well together; put them into a clean Rundlet well scented, and give them time to fine.

Sack is made of Rhenish, either by strong Decoctions of Malago Raisins, or by a Syrup of Sack, Sugar and Spices.

*Muskadel* is sophisticated with the Lags of Sack, or Malmsey thus.

They dissolve in a convenient quantity of Rose-water, of Musk 2 Ounces, of *Calamus Aromaticus* powder'd 1 Ounce, of Coriander Seed beaten half an Ounce; and while this infusion is yet warm, they put it into a Rundlet of old Sack, or Malmsey; and this they call, a Flavor for Muskadel.

Many other ways there are of Adulterating Wines, daily practis'd even in this our (otherwise well govern'd) City; but in respect they all tend to the above-mentioned Alterations, and are less General: therefore I pass them over in silence. ¶

Nor have I at present any thing more to add to this Essay toward a History of Wines, but my humble request to your Lordship, and the Honour'd Fellows of this ROYAL SOCIETY, that you would be pleas'd to Pardon the many Defects of it; and that if the Enquiries therein made come short of your Expectation, you would suspend your Curiosity until my Co-partner in this Province, the Learned Dr. Merret, shall have brought in his Ob-

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servations concerning the same Subject. For, I doubt not but the fulness of his Papers will supply the emptiness of mine. ¶

*The End of the second Treatise.*

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### *Some Observations concerning the Ordering of Wines.*

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By Dr. Merret.

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**T**HE Mystery of Wines consists in the making and meliorating of natural Wines. Melioration is either of sound or vitious Wine. Sound Wines are bettered. 1. By preserving. 2. Timely fining. 3. By mending Colour Smell or Taste.

To preserve Wines, care must be taken, that, after the Pressing, they may Ferment well; for without good Fermentation, they become *Qually*, (i.e.) Cloudy, Thick and Dusky, and will never fine of themselves as other Wines do; and when they are fined by Art, they must be speedily spent, or else they will become *Qually* again, and then by no Art recoverable.

The Principal Impediments of the Fermentation of Wines, after pressing the Grapes, are either their Unripeness when gathered, or the mixture of Rain water with them, as in wet Vintages; or else thro' the addition of Water to rich Grapes. The Spaniards use *Gieffo* to help the Fermentation of their Canary Wines.

To



To preserve Spanish Wines, and chiefly Canary, and thereof principally that which is Rازie, which will not keep so long; they make a Layer of Grapes and Gieffo, whereby it acquires a better durance and taste, and a whiter colour, most pleasing to the English.

Rازie Wine is so called, because it comes from Rhenish Wine slips, sometimes renewed: The Grape of this Wine is fleshy, yielding but a little juice.

French and Rhenish Wines are chiefly and commonly preserved by the Match, thus, used at Dort in Holland: Take Brimstone 20 or 30 pounds, rack into it melted Spices, as Cloves, Cinnamon, Mace, Ginger and Coriander-seeds; and some to save Charges use the reliques of the Hippocras Bag; and having mixed these well with the Brimstone they draw through this mixture, long, square, narrow pieces of Canvas, which pieces thus drawn through the said mixture, they light and put into the Vessel at the Bung-hole, and presently stop it close: Great care is to be had in proportioning the Brimstone to the quantity and quality of the Wine, for too much makes it rough; this smoaking keeps the Wine long, white, and good, and gives it a pleasant Taste.

There's another way for French and Rhenish Wines, viz. Firing it: 'Tis done in a Stove, or else a good fire made round about the Vessel, which will gape wide, yet the Wine runs not out; 'twill boyl, and afterwards may soon be rack'd.

Secondly, For timely fining of Wines. All Wines in the Must are more Opacons and Cloudy. Good Wine soon fines, and the gross Lees settle quickly, and also the flying Lee in time. When the grosser Lees are settled, they draw off the Wine, called Racking. The usual times for Racking, are *Midsommer* and *Alhallontide*.

The practice of the Dutch and English to rid the Wine of the flying Lees speedily, and serves most



for *French* and *Spanish* Wine is thus performed: Take of *Isinglass* half a pound, stop it in half a pint of the hardest *French* Wine that can be got, so that the Wine may fully cover it. Let them then stand 24 hours, then pull and beat the *Isinglass* to pieces, and add more Wine, and 4 times a day squeez it to Gelly, and as it thickens add more Wine. When 'tis fully and perfectly gellyed, take a Pint or Quart to a Hoghead and so proportionably; then overdraw 3 or 4 Gallons of that Wine you intend to fine, which mix well with the said quantity of Gelly, then put this mixture to the piece of Wine and beat it with a staff, and fill it top full. Note, that *French* Wines must be bunged up very close, but not the *Spanish*; and that *Isinglass* raiseth the Lees to the top of strong Wine, but in weaker precipitateth it to the bottom.

They mend the colour of sound Claret by adding thereto Red Wines, Tent or Alicant, or by an infusion of Turnsole made in 2 or 3 Gallons of Wine, and then putting it into the Vessel, to be then (being well stoppt) rowled for a quarter of an hour. This infusion is sometimes twice or thrice repeated according as more Colour is to be added to the Wine; some 3 hours infusion of the Turnsole is sufficient, but then it must be rubbed and wringed. What Turnsole is, see the Notes on the Art of Glass.

Claret over Red, is amended with the Addition of White Wines.

White Wines coming over sound, but brown, thus remedied: Take of Alabaster Powder, overdraw the Hoghead 3 or 4 Gallons, then put this Powder into the Bung, and stir and beat it with a Staff, and fill it top full. The more the Wine is stirred, the finer it will come upon the Lee, that is, the finer it will be.

To colour Sack white : Take of white Starch 2 Pounds, of Milk 2 Gallons, boyl them together 2 hours, when cold, beat them well with a handful of white Salt, and then put them into a clean and sweet But, beating them with a Staff, and the Wine will be pure and white.

One pound of the aforementioned Gelly of Isinglass takes away the brownness of *French* and *Spanish* Wines, mixed with 2 or 3 Gallons of Wine, according as 'tis brown and strong, more or less to be used. Then overdraw the piece of Wine about 3 Gallons, and use the Rod, and then fill the Vessel full, and in a day or two 'twill fine and be white, and mend if Qually.

The first Buds of *Ribes Nigra* infused in Wines, specially *Rhenish*, makes it diuretick and more fragrant in Smell and Taste, and so doth Clary. The inconvenience is, that the Wine becomes more heady, a Remedy whereof is Elder-flowers added to the Clary ; which also betters the fragrance thereof, as 'tis manifest in Elder-vinegar. But these Flowers are apt to make the Wine Ropy.

To help brown Malagoes and *Spanish Wines*, take powder of Orras-roots and Salt-petre, of each 4 Ounces, the whites of 8 Eggs, whereto add as much salt as will make a Brine, put this mixture into the Wine, and mix them with a Staff.

To meliorate Muddy and Tawny Clarets ; Take of Rain-water 2 Pints, the Yelks of 8 Eggs, Salt an handful, beat them well, let them stand 6 hours before you put them into the Cask, then use the Rod, and in 3 days it will come to it self.

To amend the Taste and Smell of Malago. Take of the best Almonds 4 Pounds, make therewith, and with sufficient quantity of the Wine to be cured, an Emulsion ; then take the whites and yelks of 12 Eggs, beat them together with Salt an handful, put them into the Pipe, using the Rod.

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To amend the Smell and Taste of *French* and *Rhenish* which are foul. Take, to an Auln of the Wine of Honey one Pound, of Elder flowers a handful Orras Powder an ounce, one Nutmeg, a few Cloves, boyl them in sufficient quantity of the Wine to be cured, to the consumption of half when 'tis cold, strain and use it with the Rod. Some add a little Salt. If the Wine be sweet enough add of spirits of Wine one pound to a Hoghead and give the Cask a strong scent. Spirit of Wine makes any Wine brisk, and fines it without the former mixture.

A Lee of the Ashes of Vinebranches, *viz.* a quart to a Pipe, being beaten into the Wine, cures the Ropiness of it; and so infallibly doth a Lee of Oaken Ashes. For Spanish ropy Wine, rack it from its Lees into a new scented Cask, then take of Alum one Pound, Orras roots Powdered half a Pound beat them well into the Wine with a staff. Some add fine and well-dryed Sand, put warm to the Wine. If the Wine besides prove Brown, add Pottles of Milk to a Pipe. *Alius*, the *Spaen* cure ropy Wine, used before it begins to fret.

Herring Roes preserve any *Stum* Wines.

To order *Rhenish* Wines when fretting. Commonly in *June* that Wines begin to ferment and grow sick, then have a special care not to disturb it, either by removing, filling the Vessel, or giving it Vent, only open the Bung, which cover with Slate, and as often as the Slate is foul, cleanse it and the bung from their Filth, and when the Fermentation is past, which you shall know by applying your Ear to the Vessel, then give it rest 10 or 12 days that the grosser Lees may settle, then rack it into a fresh scented Cask.

This mixture Meliorates vitious Wines both Smell and taste; especially *French*. Take of the best Honey one part, of Rain-water two parts, and

ne third of sound old Wine of the same kind; boyl them on a gentle fire to a third part, scumming them often with a clean Scummer (to which purpose they have a Pail of fair Water standing by to infuse it in) then put this mixture hot into a Vessel of fit capacity, and let it stand unbunged till cool. Come, to better this, put in a bag of Spices. This mixture, called by the Dutch *Soet*, will serve also to mende any Wine new or old. 2. 'Twill mend the hard taste of Wine (*i. e.*) putting a Gallon thereof in a Hoghead, and using the Rod, and then let it rest 5 or 6 days at the least, but if mild enough, add white Mustard-seed bruised.

To mend and preserve the Colour of Clarets. Take red Beet roots *q. s.* scrape them clean and cut them into small pieces, then boyl them in *q. s.* of the same Wine, to the consumption of a third part, stir it well, and when cool, decant off what's clear, and use the Rod.

*Alias*, Take of the Wine and Honey of each 2 pounds, Rainwater a Pottle, 12 Beet-roots, ripe Mulberries 4 or 5 handfuls, boyl them to half, and when cool decant, &c. *ut supra*.

To preserve Claret rack'd from its Lees. Take to Pierce 10 Eggs, make a small hole in the top of the Shells, then put them into the Wine, and all will be consumed.

To prevent souring of French Wines. Take rains of Paradise *q. s.* beat them in a Pan, and hang them or put them loose into a Vessel. Some use Lander tops.

To help sour French Wine. Take of the best Wheat 4 Ounces boyled in fair water till it break, when cold put it into a Vat in a Bag, and use the Rod. *Alias*, Take 5 or 6 Cinnamon Canes, bung them up well.

To help Spanish sour Wines. *First*, rack the Wine into a clean Cask, and fill it up with two or three Gal-

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Gallons of Water, and add thereto of burnt Chalk 4 Ounces, and after 3 or 4 days it must be rack'd and filled up again with rain Water, if the first time doth not do it. Some use Loam or Plaistering, if these Ingredients make the Wine bitter, correct the fault with Nutmegs and Cloves.

To help stinking Wines. Take Ginger half an Ounce, Zedoary 2 Drams, Powder and boyl them in a Pottle of good Wine, which put scalding hot into the Vat, bung it up and let it lie; the Species of *Diambræ* and *Diamoscu Dulc.* do the same; and so Nutmegs and Cloves which also give a kind of Raziness.

To help Wine that hath an ill savour from the Lees. First rack it into a clean Cask, and if Red Claret, give him a fresh Lee of the same kind: Then take of Cloves, Ginger and Cinnamon 2 Ounces, Orras Root 4 Ounces; Powder them grossly, hang them in a Bag, and taste the Wine once in 3 days and when 'tis amended take out the Bag. Some do thus, Take of Cloves half a pound, Mastick, Ginger Cubebs, of each 2 Ounces, *Spica Nardi* 3 Drachms, Orras Root half a pound, make thereof a fine Powder, which put loose into the Vat, and use the Rosh and make a good fire before it.

Firing of Wines in Germany is thus performed, they have in some Vaults 3 or 4 Stoves, which they heat very hot; others make fires almost before every Vat, by this means the Must fermenteth with that Vehemency, that the Wine appears between the staves; when this Ebullition, Fermentation and working ceaseth, let the Wine stand some days, and then rack it. This firing is only used in cold years when the Wine falls out green.

*Stum* is nothing else but pure Wine kept from fretting by often racking and matching it in clean Vessels and strongly scented (*i. e.*) new matched, means whereof it becomes as clear or clearer than



any other Wine, preserving it self from both its Lees by precipitation of them. But if through neglect it once fret, it becomes good Wine. The Bung of the Vessel must be continually stopt, and the Vessels strong least they break. A little Stum put to Wine decayed, makes it ferment afresh, and gives life and sweetness thereto, but offends the head and stomach, torments the gurs, and is apt to cause loosnesses, and some say Barrenness in Women.

To fine Wine presently. Fill a Cask with shavings or chips of Beech or Oak (which are best) this is to be done with much art, or else it seldom hits right, but lasteth long; put these chips into a Cask, which is called by the Dutch *een Spaen* (i. e.) a Chip, into which they pour in as much Wine as the Cask will hold, and in 24 hours the Wine will be fine. Or have a quart of Vinegar in three days will fine a Hoghead of Wine.

To set old Wine a fretting being deadish and dull in taste. Take of Stum 2 Gallons, to a Hoghead, put it hot upon the Wine, then set a Pan of fire before the Hoghead, which will then Ferment till all the sweetness of the Stum is communicated to the Wine, which thereby becomes brisk and pleasant. Some use this Stumming at any time, some in *August* only, when the Wine hath a Disposition to fret of itself, more or less Stum to be added, as the Wine requires.

The best time to rack Wine is the decrease of the Moon, and when the Wine is free from fretting; the wind being at *North east*, or *North west*, and not *South*, the Sky serene, free from Thunder and lightning.

Another Match for French Clarets and Spanish Wines. Take Orras-roots, Mastick and Brimstone, each 4 Ounces, Cloves 2 Ounces, ordering it as *pra* in Matching Wines. This will serve for all Wines,



Wines, adding if you please Nutmegs, Ginger, Cinnamon and other Spices. Double the quantity of Orras-root is to be used for Spanish Wines.

To help Malago's which will not fine. Take of crude Tartar powdered, sifted and dried 2 pounds, mix it with the whites of 6 Eggs; dry powder and sift them again, then overdraw the Pipe as much as will serve to mix with this Powder, and fill the Pipe therewith, beating it with a Staff as before, and this Wine will be fine in ten days.

Another speedy way to fine French Wines. Hang a piece of scent in the Cask, and when 'tis burnt out, put in a pint of the best Spirit of Wine, and stir it about. Some add, a little Salt well dried: This fines the Wine in 24 hours.

To keep Must a Year. Take Must, put it into a Cask pitcht within and without, half full, stop the bung close with Mortar. Others sew the Cask in Skins, and sink it for 30 days into a Well or River. Or else a Garland of *Polium Montanum* hung in the Vessel. Or rub the inside of the Vessel with Cheese; all these preserve Rhenish Must, as the *Scholias*t on *Dodonaus* in Dutch.

Alum put into a Hogs-bladder, keeps Wine from turning flat, faint or brown, and beaten with the whites of Eggs removes its ropiness.

Flat Wines recovered with Spirit of Wine, Raisins and Sugar or Molosses; and Sacks, by drawing them on fresh Lees.

Our Wine-coopers of latter times use vast quantities of Sugar and Molosses to all sorts of Wines, to make them drink brisk and sparkling, and to give them Spirits, as also to mend their bad tastes; all which Raisins and Cute and Stum perform.

Countrey Vintners feed their fretting Wines with raw Beef; and here, their Canaries with Malago, which is added more or less to all Canaries.

## Ordering of Wines.

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The composition of Wines is manifold, the Vintners usually drawing out of 2 or 3 Casks, for one Pint, to accommodate it to the Palate of those that drink it. Most of the Canary is made with Malago and Zerez Sack.

I shall conclude with two common compounded Wines, *Muscaden* and *Hippocras*, the former usually made with 30 Gallons of Cute (which is Wine boyled to the consumption of half) to a Butt of Wine. Or the Lees and droppings boyl'd and clarified; its Flavour is made of Coriander Seeds prepared and shavings of Cyprus wood. Some instead of Cute, make it of Sugar, Molosses and Honey, or mix them with the Cute. This following is an *Hippocras* of my own making, and the best I have tasted.

Take of Cardamoms, Carpobalsamum of each half an Ounce, Coriander seeds prepared, Nutmegs, Ginger, of each 2 Ounces, Cloves 2 Drachms; bruise and infuse them forty eight hours in Zerez and White Wine, of each a Gallon, often stirring them, then add thereto of Milk three pints, strain through an Hippocras Bag, and sweeten it with a pound of Sugar-Candy.

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THE

## *The Art and Mystery of Vintners and Wine-Coopers.*

1. *The best way for to help the fretting or boyling of any piece of Spanish Wine.*

**T**Ake the Butt or Pipe that frets or boyls, and rack it off clean from the gross Lee; then take two or three penny worth of the strongest *Aqua Vita*, and put it in at the Bung-hole, as you do a piece of Scent, and it will burn in the Pipe very well: Be sure that you drain the Pipe well; and this will lay the fretting of it.

2. *To keep Wines sound and fresh all the year.*

**Y**OU must fill your Vessel once a Month or six Weeks with your best Reeds you can get: for Reeds do preserve the Claret as Soot doth Malmsey or Bastard. Fill White and all other Wines with the same; and those you intend to keep, give them their Lees a day together; then at Night lay them upright, and be careful to keep them; if they lack vent in any place they will faint and spoil.

Note that *July* and *August* are the worst Months to keep Wines in.

3. *For Canary that hath a flying Lee.*

**I**F your Canary hath a flying Lee, and will not fine down, draw him into a fresh Butt or Pipe with fresh Lees, and give him a good pearl with the whites of 8 Eggs, and beat them with a handful of white Salt: And if it be any whit tawny, put thereto a gallon of Milk, and beat it well, then lay it upright, stop it close; and in two days broach it if you will.

4. *To make or divide Malmsey.*

**I**F you have three Butts of Malmsey you may make four if you please: If you have two, you may make three; if one Butt, you may make one and a half thereof, with such Laggs as you have of White, Claret, and Canary that are old, with two Gallons of Cutt to every Butt, so that it be Spanish Cutt. This way you may rid your Laggs and old Canary away. The Art followeth.

5. *The Art of Making or Dividing Malmsey.*

**T**Ake to every Butt six Eggs both yelks and whites, and a handful of Bay-salt, beat them well together, mixing therewith a pint of old Sack, and put it into the Butt; then beat the Butt well; and if it want a colour, take two Gallons of Red-wine, and a quarter of a pound of Coriander-seed well beaten small; mix them together, and put them into the Butt; then give it six or eight stroaks more, then stop it three or four days; broach it after at your will.

## 6. For Claret that hath lost his Colour.

**T**Ake a pennyworth of Damascens or Bullace or more if you see good, and stew them in Red-wine, and make a pottle or more of the Syrup.

## 7. For Bastard that pricks.

**R**Ack him upon a good Muscadine Lee, then take three gallons of the best Ale; and put therein two or three Almonds, then fill it up with Bastard Syrup or Canary mixed with your Laggs, and it will draw for Bastard or Muscadine.

## 8. Another for the same.

**T**Ake five gallons of clarified Honey, and put it into your Cask, and beat in it a pearl of the whites and yelks of 6 Eggs, and let it rest.

## 9. To make brown Bastard.

**T**Ake the Laggs of Claret or White, and put them into your Cask, with your Laggs of Spanish Wine before you do prick; then take 30 or 40 pounds of Bastard Syrup, and beat it well with the same Wine in a half Tub, then put it into your Cask and beat it up with pearl of the yelks and whites of Eggs, and let it rest.

## 10. For White-wine that hath lost its colour with lying.

**O**Verdraw the Hogshead of Wine some five or six Gallons; take three Gallons of new Milk, put it into a Pale, and let it remain there till the cream be settled for 30 hours; then skim it and put it into the Hogshead, and beat it well, and then fill it

it up; and if it be in the Morning, the next Morning it will be fine: you may add to it a little Starch and a little Bay-salt beaten together as aforesaid.

11. *Sack that is lumpish or lowring.*

**B**Eat the whites of 6 or 8 Eggs with Bay-salt, Roch-alum, and a quart of Bean-flower or beaten Rice, if it be brown, but if white use Milk; beat all these together, then blow off the froth very clean, and lay a clean sherd of a Tile over the Bung-hole: let it lie till it be fine, then rack it off with a good scent, and it will draw well.

12. *For Sack or any other Wine that doth prick or boyl.*

**T**Ake 30 or 40 of the whitest Lime-stones you can get, flake them in a pottle of the same Wine in a Can, then take more Wine and stir them together; and put it into your Cask, and stir it well till you think it be enough. Let it rest till it be fine, and it will take away the prickjng, and make it drink kindly.

13. *How to make Scent.*

**T**Ake four Ounces of Brimstone and a little Alum, and a spoonful of *Aqua Vita* and mix them together, then take a piece of new Canvas and dip therein; then must you have in readiness the powder of Nutmegs and a few Cloves or Orange peels, a few Coriander-seeds and Aniseeds, being ready bruised before your Brimstone be cold; strew them upon your Cloth, and when it is cold lay it upon a clean Paper, and it will be very good for your Cask.

14. *How*



*14. How to make Hippocras.*

**T**AKE for a gallon of White a pound of Sugar, one Ounce of Cinnamon beaten, 2 or 3 ounces of Cloves, two ounces of Gallinal, half an ounce of Grenes; bruise your spice together with a handful of Rosemary, and let it stand and steep 12 hours, then stir it well together, and put it into an Hippocras Bag, and let it run into a clear Vessel, and so you may draw it.

*15. To fine your Wines and make them pleasant.*

**T**AKE white peble stones, and bake them in an Oven till they begin to crack, then beat them to fine Powder; then with a good quantity of Stone-honey clarified, and so in some of the same dissolve them and put them into your Cask, and stir them with your paddle staff, and in a day they will be fine.

*16. For Hippocras Gyle.*

**C**innamon one ounce, Ginger half an ounce, grain 2d. Long-pepper, Cloves, Coriander-seeds, Calamus, Andores, Nutmegs, Caraway-seeds 2d. Limons, Rose water, Bay-leaves and Rosemary.

*17. Another for the same.*

**G**inger 3 ounces, Cinnamon 3 ounces, Calamus one ounce, Cloves half an ounce, Coriander seeds three ounces, Nutmegs three pennyworth, Long-pepper three pennyworth.

*18. Ano-*

18. *Another for the same.*

**C**innamon 3 ounces, Cariophyllorum 2 ounces, Cardamum and Cubebs, Gallinal half an ounce, Gingiberis one ounce, Cantherum 3 pennyworth, Grana Paradisi 3 pennyworth.

19. *Then for the Spanish Wines, Sherry, Sacks, white and hard be best.*

**R**ight Malago's are as good as Canaries, but the other are pleasanter.

Right Muscadines are hard to come by, therefore they are commonly compounded.

20. *Wines commonly compounded.*

Pocris, brown Bastard, white Bastard, Rumrey, Hallacker, Aligant : and these likewise, Frantigjack, Tent, Curt, Rhenish, and Deal Wines.

21. *The fittest times to rack Wines.*

**R**ack your Wines when the wind is in the North, and when it is clear and temperate weather ; in the increase of the Moon, when she is under the Earth, and not in the full heighth. They turn eager before *Whitsuntide* ; through extraordinary heat they turn eager, or otherwise ill-conditioned.

22. *For White-wine that hath lost its Colour.*

**F**irst rack him from his Lees, then if you have any Coniack Lees, you may put your faint and awny Wine upon them ; rowl them over and beat them,

them, and within the space of 10 or 12 days rack them off; then shall you have it drink brisk and white.

23. *How to break Wine that ropes.*

**T**ake a course harden Cloth, and put it before the Bore when you have set it abroach; then put in your Leathers, and rack it into a dry Cask; then take 5 or 6 ounces of beaten Alum, and put in it and beat that Wine and Alum well together, and it will fine down very well.

24. *How to make any Wine fine speedily.*

**T**ake a handful of dried Limon-rind, and put it into 10 or 12 Gallons of White, and put therein a pint of Damask-Rose-water; then rowl it up and down, and lay it upright; then take a sprig of Clarey that is seeded, and let it steep 24 hours; then take it out, and it will appear very well.

25. *If a Hogshead of Claret hath lost its Colour.*

**T**ake one Gallon of Sloes and Damascens, or Black-Cherries, bruise them well and straine them, and put the juyce into a Hogshead of tawny Wine, and it will drink very well.

26. *How to mend the Colour of White-wine.*

**T**ake 3 or 4 Gallons of Milk, or less, according as you think fit or do find the Colour of the Wine decayed; put it into your Hogshead then rowl it well; and then open your Bung, and put in 3 or 4 ounces; then fill up your Hogshead

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nd rowl it 4 or 5 times over, and lay it up, that you may rack it when it is fine.

27. *How to mend a Piece of Canary, or a Butt of Malago that is brown.*

TAKE 5 or 6 Gallons of Milk, if it be very brown; if not, take as much as you think fit, and over-draw your Butt or Pipe; then put in your Milk, and beat it a good while; and when it is well beaten, take 5 or 6 ounces of Roch-Alum, and put it therein; then give it some 30 or 40 stroaks; then fill up your Cask, and let it lie till it be fine; then rack it off from its white bottom, and rack it into a clear Cask, and burn a piece of Scent in it; and then fill it up, and let it lie till it be fine, and it will spend very well.

28. *For to flower a Butt of Muscadine.*

TAKE one grain of Musk, one ounce of Cloves, one ounce of Nutmegs, one of Anniseeds, and one ounce of Coriander-seeds, and two handfuls of Orange and Limon-Peels well dryed and beaten, and a grain of Long-Pepper together; put it into a bag, and hang it in the Bung-hole for some 2 or 3 days together with 10 Gallons of Bastard.

29. *How to make Rhenish-wine.*

TAKE one handful of dryed Limon-peels, and put them into 10 or 12 Gallons of White-wine, and put in one pint of Damask-Rose-water; then rowl it up and down, and lay it upright, and open the Bung of it, and take a little branch of Clary, and let it steep 24 hours; then take it out, and it will taste very well.

30.

**A** Butt of Malago if it be full gaged 126 Gallons, the Tun is 232 or 252 Gallons, and every Section is 4 Gallons, and at 12 d. the Gallon.

31. *A Pearl for Malmsey.*

**A**S you pearl your Muskadine, so you must your Malmsey, but use not the whites of Eggs.

32. *A Pearl for Muskadine.*

**W**Hen it comes to be fine, within 4 hours after take new-laid Eggs, beat them Shells and all, with two handfuls of Bay-Salt; put to the same a quart of good Sack which is old; a handful of white Sugar-candy beaten small; then beat them all together very well; then over-draw your Butt some 8 or 10 Gallons; then beat your Butt an hour; then put in your Pearl; then beat him again gently half an hour, stop him close up, and in 24 hours broach him.

33. *How to make Tawny Bastard white.*

**I**F it be full, draw out 10 or 12 Gallons; then fill it near up within 10 Gallons, with the Lags of Rothal and Gascoign Wines for Sack; and take 5 Gallons of Milk, and 8 whites of Eggs; a handful of Bay-Salt, and as much Whiting; beat them all together; then mingle them well with Milk, and put them into the Bastard, and beat it well for half an hour; then fill him full with your Lags, and give him 8 or 9 stroaks, stop it close, and within 3 days you may broach him.

**I**F red Wine be faint, draw it out into fresh Lees, and put into him 4 or 5 Gallons of Alicant; then turn him twice in the Lees, and let him lie with the Bung upright 7 days before you broach him, and it will have a good colour and taste.

35. *A Pearl for Scent and Flavour for a Butt of Muscadine.*

**T**AKE a quarter of a yard of Canvas, and make a Bag of it; then take an ounce of Calamus Aromaticus; of Floras 2 ounces; of Orras one ounce; of Coriander-seed as much; of Anniseeds bruised and beaten: Put these into the Bag, and let it hang in the midst of the Wine 3 days and nights; then take it out; after that 2 grains of Civet; as much Musk; a pint of Damask-Rose-water, warm the water blood-warm, rub well the Musk with the back of a and so put it into the Butt, and stop it close, and rowl him, but turn him not over, and it will be perfect in 2 days.

36. *If White have an ill Taste or Scent.*

**H**ALF draw him out; then take to either part 2 gallons of Mornings Milk, or more, and a handful of Rice, and as much Bay-Salt; beat them together with a Paddle-staff for half an hour; then fill up the Hogshead, and rowl it well, and turn it over in the Lees, and broach him within two days.



37. *If Claret be faint and want colour.*

**D**raw it off into a fresh Hoghead and fresh Lees as can be gotten, and draw it out very closely; then take two pennyworth of Turnsole, lay it in steep in 3 or 4 gallons of the same Wine for 3 hours; then rub it and all to wash with your hands, till it colour your Wine deeply; then put it into the Hoghead; then draw as much out and use accordingly, and so the 3d. or 4th. time rowl it half an hour, and lay it up stopp'd, and in 3 days broach it.

38. *A pleasant Scent for Red Wine.*

**T**ake 2 ounces of Brimstone, half an ounce of Calamus, mix them together in a pint and half of Burrage-water; melt the Brimstone in a Pan, and let the rest be with it therein; dip it in so many cloths as will take it up, and put the cloths in your Hoghead; then take out your Ashes, and rack your Wine in; then put in it a pint of Rose-water, rowl it well half an hour, and it being close stopt, let it lie 2 days, and this shall give it or any other Gascoign wine, a pleasant scent or taste.

39. *If a Butt of Sack be small.*

**T**ake half a peck of Lime-stones well burned, put them in at the Bung-hole amongst the Wine, then beat or rowl it well together, and let it lye till it be fine, then rack it off into a clean Cask, and fill it full and draw it off when you please.

40. *If Wine at any time grow long or lowring.*

Take 1 pennyworth of Roch Alum and bruise it small to powder: over-draw the Hogshead four gallons, then strow the powder therein, and beat well half an hour; then fill it up and broach it within three days, and be sure it take no vent.

41. *If Sack or White-wine have lost its colour.*

Take four gallons of Milk, let it stand three hours in a Tub; skim of the cream, and overdraw our Hogshead 6 gallons: take the yolks of six Eggs beaten; put them into your Milk, and beat them together, and put them into the Wine, and beat the Wine well, and stop it up close, and in four days draw it.

42. *How to mend a Butt of Sack, Malago, or Pipe of Canary that pricks.*

Take about 8 or 10 ounces of mere Chalk, beat it very well, and put it in steep in 4 or 5 gallons of Milk; put in about two pounds of powder'd Sugar according to the hardness of the Wine: let this lie in steep a day and night; stir it together now and then, so as when you put in your Wine; beat it reasonably well before you put it in, then put it in as fast as you can, and beat it lustily for a quarter of an hour; lay it upright and it will take away the pricking of it and fine it.

*The end of the First Books.*

The

## The Second Book.

1. *To correct the Rankness and Eagerness of Wines, as Sack and Malago, or any other Sweet Wines.*

**T**AKE 20 or 30 of the whitest Limestones, and slack them in a gallon of the Best Wine, then add more Wine, and stir them together in a Half-Tub with a Paddle-staff: pour this mixture into the Hogshead, and again use the Paddle-staff: Let the Wine settle, and then rack it off from the white-bottom.

2. *Against the pricking of French-wines.*

**T**AKE of the powder of Tile one pound, Roch-alum half a pound; mix them and beat them well together with some of the Wine, then put them into your Hogsheads as the former.

3. *When*

3. *When Rhenish wines prick.*

**R**ack them into a clean and strongly scented Cask or Phat; add then to the Wine 8 or 10 gallons of clarified Honey, with one gallon or 2 of skim'd Milk; beat them all together, and let them settle.

4. *For Claret that hath lost its briskness.*

**R**ack it upon a good Lee of red Wine, and put into it a gallon of the juice of Sloes or Bullace; which after a little fomentation and rest makes Wine drink brisk and rough.

5. *Another.*

**T**HE like may be done with Virginian Pears, otherwise called *Metagane Sunaux*, which hath a deep sanguine colour, and a rough taste.

6. *To meliorate the taste of hungry and too eager White-wines.*

**D**raw off 3 or 4 gallons of the Wine, and infuse therein as many pounds of Malago Raisins, stoned and bruised in a stone Mortar till the Wine hath sufficiently imbibed their sweetness and tincture, which it will do in a days time; then run it through an Hippocras-bag, and put it into a fresh Cask well scented, together with the whole remainder of the Wine in the Hoghead, and so leave it to fine.

7. *To help stinking Wines.*

**T**HE best way is to rack them from their old and corrupt Lee ; besides you must give them a fragrant smell or flavour, by hanging in them a little bag of Spices, such as Ginger, Zedoary, Cloves, Cinnamon, Orris roots, Cubebs, grains of Paradise, Spicknard : Or you may use these only ; A few Cinnamon-Canes hung in it ; some use Elder flowers and tops of Lavender.

8. *For Claret that decayeth.*

**R**ack it upon a new and fresh Lee, and the shaving of Fir-wood, which will bring it to its body again.

9. *How to make Bastard.*

**T**AKE 4 gallons of White, 3 gallons of Canary that is old, 5 pound of Bastard-Syrup ; beat them well together, and put them into a clean Rundlet well scented, and give it time to fine.

10. *How to make Rhenish.*

**T**AKE a Hogshead of Rochel-Cogniacks, or Nant White-wine ; rack it into a fresh Cask strongly scented ; then give your white Pearl ; put into it 8 or 10 gallons of clarified Honey, and 4 pound of coarse Sugar ; beat it well, and leave it to clarify ; then to give it the flavour, add the Decoction of Clary-seeds or Gallitricum, and that will give it the right taste.

*How to make Muskadel.*

**T**AKE a convenient quantity of Rose-water, of Musk 2 ounces, of Calamus Aromaticus one ounce, of Coriander seeds beaten half an ounce; and whilst this Infusion is yet warm, put it into a Rundlet of old Sack or Malmsey.

12. *If an Hogshhead of Claret be found and hath lost its Colour.*

**A**DD to it Red-wine, Tent or Allicant, or by an Infusion of Turnsole, as much as you think convenient, infused in 2 or 3 gallons of Wine; and then put it into the Vessel to be well stopp'd, rowl it a quarter of an hour; this Infusion is twice or thrice repeated sometimes, according as more colour is to be added to the Wine; some 3 hours infusion of the Turnsole will be sufficient, but then it must be rubbed and Wringed. What Turnsole is, see the Notes or the Arts of Glass.

3. *White-wines that come over sound, and have lost their colour, and turn brown.*

**T**AKE of Alabaster-powder 3 or 4 ounces, and draw over the Hogshhead 3 or 4 gallons; then put of this powder into the Bung as much as you think fit, and beat it up with a Staff, and then fill it up top full; the more the Wine is stirred up, the finer it will become upon the Lee.

14. *To colour Sack-white.*

**T**AKE of white Starch 2 pound, of Milk 2 gallons, boyl them together 2 hours; it being cold, beat it well with a handful of Salt therein, the Salt must be white, common Salt; let your Wine be racked and then put it into it; the Wine being racked into a fresh Butt or Pipe, beat it well together with your Paddle-staff, and it will make the Wine pure and fine.



## 15 Of Rhenish-wine.

**T**HE first Buds of *Ribes nigra* infused in Wines, especially of Rhenish-wine, makes it diversick, and more fragrant in smell and taste, and so doth Clary : The inconvenience is, that the Wine becomes more heady ; the remedy of which is Elder-flowers added to Clary, which also betters the fragrancy thereof, as it is manifest in Elder-vinegar ; but these Flowers are apt to make the Wine ropy.

16. *To help Malago's, or any other Spanish Wine, that hath lost their colour, or turned brown.*

**T**AKE the powder of Orras-roots and Salt-peter, of each 4 ounces, the whites of 8 Eggs, to which add as much Salt as will make Brine ; put this mixture into the Wine, and mix them with a Paddle-staff.

17. *To mend the taste and smell of Malago.*

**T**AKE of the best Almonds 4 pound, make with them and a sufficient quantity of the Wine to be cured, an Emulsion ; take then the Whites of twelve Eggs, and a handful of Salt ; put all into the Pipe or Butt, and beat it well with a Paddle-staff.

18. *To help Claret that is Tawny or Muddy.*

**T**AKE of Rain-water one quart, 8 Eggs, a handful of Salt ; beat them well, and let them stand six hours before you put them into the Cask ; then use the Paddle-staff, and it will come to it self in 3 days.

19. *To mend the taste and smell of French Wines or Rhenish, that are foul.*

**T**AKE a gallon of the Wine, a pound of Honey, a handful of Elder-flowers, Orras-powder one ounce, a Nutmeg, and a few Cloves ; boyl them in a sufficient quantity of the Wine to be cured, of the consumption of half ; when it is cold, strain it, and beat it with a Stick ; put a little Salt, if the Wine be sweet enough ; add of Spirits of Wine one pound

to a Hoghead, and give the Cask a strong scent; spirit of Wine makes any Wine strongly brisk, and fines without any further mixture

20. *A Lee of the Ashes.*

**O**F Vine-branches one ounce; a quart to a Pipe being beaten into the Wine cures the ropiness of it, and the same infallibly doth the Lee of **O**aken Ashes; for *Spanish* ropy Wines, rack it off from its Lee into a new scented Cask; take of Alum one pound, of Orras-roots powdered half a pound; beat them well into the Wine with a Paddle-staff; add fine and well dried Sand, put it warm to the Wine; if the Wine besides prove brown, add 3 pottles of Milk to a Pipe; otherwise it cures ropy Wines, used before they begin to fret.

21. *To order Rhenish-wines.*

**W**Hen fretting commonly in *June*, when Wines begin to ferment and grow sick, then have a special care of disturbing them, either by removing, filling of Vessels, of giving Vent, only open the Bung, which cover with a Slate, and as often as the Slate is foul, cleanse it and the Bung from filth; and when the Fermentation is past, which you shall know by applying your ear to the Vessel, then give it rest 10 or 12 days, that the gross Lees may settle; then rack it into a fresh scented Cask.

22. *To mend and preserve the colour of Clarets.*

**T**Ake red Beets-roots (q. f) scrape them clean, and cut them into small pieces; then boyl them in a quart of the same Wine, till a third part be consumed; skim it well, and when it is cold, take what is clear of it (or decant) and use the Paddle-staff.

23. *Another for the same.*

**T**Ake of the Wine and Honey of each 2 pound, of Rain-water a pottle, 12 Beet-roots, 4 or 5 handfuls of ripe Mulberries; boyl them to half,

when it's cool, decant with the use of the Paddle-staff.

24. *To meliorate vicious Wines, and especially French, both in smell and taste.*

**T**AKE of the best Honey one pint, of Rain-water 2 parts, and the third part of Wine old, of the same kind; boyl them on a gentle fire to a third part, skimming them often with a Skimmer, and dip the Skimmer into a Pail of clean water every time after it hath been skimmed, once to rince the Skimmer; then put this mixture into a Vessel of fit capacity, and let it stand unbunged till it cool: Some to better this, put in a bag of Spices: this mixture, called by the *Dutch, Soe*, will serve to fine Wines new or old; it will amend the hard taste of Wines, and in each putting of a gallon thereof into a Hoghead, and using the Paddle-staff, let it rest 5 or 6 days at least; but if mild enough, add white Mustard seed bruised.

25. *To mend and preserve the Lees of Clarets.*

**T**AKE to a Tierce 10 Eggs, make a small hole in the top of the shells; then put them into the Wine, and all will be consumed.

26. *To prevent Scouring of French Wines.*

**T**AKE grains of Paradise (q. s.) beat them in a Pan, and hang them or put them loose in a Vessel; some use Lavender tops.

27. *To help French Wines that are sowre.*

**T**AKE 4 ounces of the best Wheat boyled in fair water till it break, and then when it's cold, put it into a Phatt in a bag, and use the Paddle-staff; otherwise take 5 or 6 Cinnamon-canes, bung them well,

28. *To help Spanish Wines that are sowre.*

**F**IRST rack the Wines into a clear Cask, and fill it up with 2 or 3 gallons of Water; after 3 or 4 days it must be rack'd and filled up again with Rain water

water ; if the first doth not do, some use Lome or Plastering : If these Ingredients make the Wine bitter, correct the fault with Nutmegs and Cloves.

29. *To help stinking Wines.*

**T**AKE Ginger half an ounce, Zedoary 2 drams ; pound and boyl them in a pottle of good Wine, which put scalding hot into the Phatt ; bung it up, and let it lie the space of two days ; *Diambræ* and *Diomoscu dulce* do the same, and so Nutmegs and Cloves, which also give a kind of Raci- nels.

30. *To help Wine that hath an ill savour from Lees.*

**R**ACK it into a clean Cask, and if it be White or Claret, give it a fresh Lee of the same Wine, then of Cloves, Ginger and Cinnamon 2 ounces, Orras-roots 4 ounces ; powder them grossly, hang them in a Bag, and taste the Wine once in three days, and when 'tis amended, take out the Bag.

31. *Or as some do it.*

**T**AKE of Cloves half a pound, Mastick, Ginger, Cubebs, of each 2 ounces, Spicknard 2 drams, Orras-roots half a pound ; make thereof a fine Powder, and put it loose in the Phatt, and use the Paddle-staff, then make a good fire before it.

32. *The best time to rack Wine.*

**I**S at the Decrease of the Moon, and when the Wine is free from fretting, the Wind being at North-east or North-west, and not at South, the Heavens free from Thundering and Lightning.

33. *For a Scent for French and Spanish Wines.*

**T**AKE Orras-roots, Mastick and Brimstone, of each 4 ounces, of Cloves 2 ounces, ordering *ut supra*, in making Wines this will serve for all Wines, adding if you please, Nutmegs, Ginger, Cinnamon,

and other Spices ; double the quantity of Orras-roots, for the Spanish Wines.

34. *To help Malago's that will not fine.*

**T**Ake crude Tartar-powder sifted and dried 2 pounds, mix it with the whites of six Eggs dried to a powder ; then sift them again, then overdraw the Pipes as much as will serve to mix this Powder, and fill the Pipe therewith, beating it with a staff as before, and the Wine will be fine in 10 days.

35. *To fine French Wines.*

**H**Ang a piece of Scent in the Cask, and when 'tis burn'd out, put in a pint of the best spirit of Wine, and stir it about ; some add a little Salt well dried, this fines Wine in 24 hours.

36. *To keep Must a year.*

**T**Ake Must, put it into a Cask pitch'd within and without half full, stop the Bung close with Mortar ; otherwise sew the Cask in Skins, and sink it for 30 days in a Well or River, or else a Garland of *Pulsium Montanum* to hang in the Vessel ; or else rub the inside with Cheese : These preserve the Rhenish Must, as the Scholiast on *Dodorus* in *Dutch*.

37. *To keep Wine from turning flat, faint or brown.*

**A**Lum put into a Hogs Bladder keeps Wine from turning flat, faint or brown, and beaten with whites of Eggs removes its Ropiness.

38.

**W**ines recovered with Spirits of Wine, Raisins and Sugar, or Molosses ; and Sacks, by drawing them on fresh Lees.

39. *How to make Maskadine.*

**T**Ake 30 gallons of Soot, which is Wine boyled to a Consumption of half, to a Butt of Wine, or the Lees and droppings boyled and clarified : its flavour is made of Coriander seeds prepared, and the shavings of Cyprus Trees : Some instead of Soot make

make of Sugar Molosses and Honey, or mix them with the Soot.

*40. To make Hippocras.*

**T**AKE of Cardamoms, Carpobasamus, of each half an ounce, Coriander seeds prepared, Nutmegs, Ginger, of each 2 ounces, Cloves 2 Drams; bruise and infuse them 48 hours in Rerer and White-wine, of each a gallon; after stirring of them, add thereto 3 pints of Milk, strain it through an Hippocras-bag, and put thereto a pound of Sugar Candy to sweeten it.

*41. For the boyling of Canary or Sack.*

**D**RAW off 4 or 5 gallons, then put to it 21 gallons of Milk, from which the Cream hath been skimmed; beat them till they be thoroughly commixed, adding one pennyworth of Roach Alum dried in a Fire shovel and powdred, and as much of white Salt: After this take for the boyling of Canary or Sack, the whites of 10 or 12 Eggs, and a handful of Bay-salt; having beaten them together in a Tray, put them also in the Wine, filling up the Wine in the Pipe again, and letting the Wine stand 2 or 3 days, in which time the Wine will recover to be bright to the eye and fine, and quick in taste; but be sure you draw it off from that bottom soon, and spend it as soon as you can.

*42. For Claret that frets, and hath a flying Lee.*

**T**AKE 21 pound of the powder of Pebble stones baked in an Oven, the whites of 10 or 12 Eggs, and a handful of Bay-salt; having beaten them well together in 2 gallons of the same Wine, then mix them with that in the Cask, and after 2 or 3 days draw off the Wine from the bottom: The same Pearl serves for White-wine upon the fret, by the turbulency and resting of their Lee.



43. *For Rhenish that frets.*

**TO** which 'tis most prone after *Midsummer* as aforesaid. They seldom use any other Art but giving of it Vent and Covering; then open the Bung with a Tyle or Slate, but be sure to wipe the filth off the Slate when there is any, and when it hath done fretting, let it rest for a week; then rack it off into a new scented Cask, and this will cure it.

44. *For Spanish Wine disturbed by a flying Lee.*

**TAKE** of whites of Eggs, Bay-salt, Conduit-water and Milk; beat them well together in a convenient Vessel; then pour them into the Pipe of Wine, having drawn first out of the Pipe a gallon of Wine or two, blow off the Froth very clear; hereby the Tumult will in 2 or 3 days be composed, the Liquor censined, and the Wine drink pleasant, but will not continue so long: Therefore I counsel to rack it off from the milky bottom after a weeks settlement, lest otherwise it drink foul, and change colour; and this will do.

45. *For Spanish or Austrian Wines grown yellow or brownish.*

**TAKE** as much Milk as you think fit, sometimes alone, and sometimes with Isinglass well dissolved, and sometimes with white Starch, by which the Sulphur is forced to the bottom of the Vessel: The same effects Flower-deluce-roots, and Salt-peter 4 or 5 ounces, of whites of Eggs 8 or 10, and a convenient quantity of common Salt mix'd and beaten in Wine.

46. *To correct Wines that are lumpish, foul and ropy.*

**TAKE** Powder of burnt Alum, Lime, Chalk, Plaster; for Spanish, white calcin'd Marble, Bay-salt, and other the like Bodies, which cause precipitation of the gross and visced parts of the Wine there afloat.

47. *An Example to attenuate Spanish Wines that are foul and lumpish.*

**H**AVING racked them into a new scented Cask, make a Pearl of burnt Alum, Salt and Conduit-water; then add thereunto the Powder of Bean-flower or Rice a quart, and if they be brown and duskyish, Milk; beat all these together with the Wine, blow off the froth, and cover the Bung with a clean Tyle; after a few days rack the Wine again and put it into a Cask well scented: Here some perhaps will not understand well what is meant by scenting of a Cask; for this purpose I explain it as follows.

48.

**T**AKE of Brimstone 4 ounces, burnt Alum one ounce, *Aqua Vita* 2 ounces; put them into an Earthen Pan or Pipkin, and hold them over a Chafing-dish of glowing Coals till the Brimstone runs; then dip therein a piece of new Canvas, and instantly sprinkle thereon the powder of Nutmegs, Cloves, Coriander-seeds and Aniseeds. And this is the Scent.

49.

**O**NE this is: First, You must give it a Pearl, then draw it from the Lees, after the clarification by that Pearl; this done, infuse 2 pound of Turnsole in good Sack all Night, and the next day putting a strained infusion in the Wine in the Hogshead with a Spring-Funnel, leave it to fine, and after draw it for excellent Wine.

50. *Another.*

**M**AKE the Lees of the Ashes of Vine-branches, or of Oakleaves, and pour it out into the Wine, and after stirring leave it to settle; put a quart of Lee to a pint of Wine.

51. To mend Claret decayed in Colour.

**F**irst rack the Wine upon a fresh Lee, or Allicant, or red Bourdeaux Wine; then take 3 pound of Turnsole, steep it all night in 2 or 3 gallons of the Wine, and having strained the Infusion in a Bag, pour the Tincture into the Hogthead, sometimes they suffer it first to fine of it self in a Rundler, and cover the Bung with a Tyle, and so let it stand for 2 or 3 days, in which time the Wine usually becomes well coloured and bright; some use only the Tincture of Turnsole.

52.

**Y**OU may take for the same purpose a bushel of Elder-berries, pick them from their stalks, bruise them, and put them and the strained juice in to the Hogthead of discoloured Claret, to make it drink brisk and bright.

53.

**I**f the Claret be not found and good, overdraw for 4 gallons, then replenish the Vessel with much good Wine Red, and rowl him upon his bed leaving him reversed all night, next morning turn the Bung uppermost, which being stopp'd, leave the Wine to fine: Observe in these Causes, to see such newly recovered Wines abroach the very next day after fined, and draw them for sale speedily.

*The End of the Second Book.*

## The Third Book.

### 1. For Faint Sack.

**B**Eat it with Soot, and whites and yelks of Eggs.

### 2. For a Butt of Malago that boyls.

**T**AKE a pound of Roch Alum, boyl it in a Pan of Iron, take off the skim, and beat it together with 6 Eggs and 13 Gallons of Milk, beat it well in the Butt or Pipe together.

### 3. For a Butt of Sack that Pricks.

**T**AKE 3 quarts of Bean-flower, put some of the same Wine into it, beat it well for fear of clogging, put it in the Butt, and beat it 2 hours, then fill it again, and it will keep it.

### 4. For Sack that is faint and tawny, and will not fine.

**R**ACK them into a clean Cask, give them a scent of Aqua vitæ, put at the least 2 pennyworth in the Butt, put in 3 or 4 Gallons of Milk, beat it for half an hour, make a Pearl of 10 whites of Eggs, Bay-salt and Conduit-water, beat it again, and fill it full of Wine, and blow off the froth; then lay a Tyle on the Bung, and put half a pint of Aqua-vitæ in it.

### 5. For Sack that is eager.

**T**AKE 3 or 4 Lime-stones that are white, put them into a Can, and pour a pottle of the same Wine over them, let them stand 3 or 4 hours till they are like Flower; then put 2 or 3 gallons of Wine more of the same, stir it well till it be like Milk; then put it into your Butt, let it be half an hour, then taste

taste it, if the pricking be not gone, put more Lime to it, when you find the pricking gone, then take 3 gallons of Milk, the whites of 3 Eggs, some Bay-salt, a little Conduit water, and half a pound of burnt Alum beaten together, and in a short space it shall be perfect white, and fine without pricking.

6. *How to make a Gallant Hippocras.*

**T**AKE 4 gallons of White-wine, 4 pound of powder'd Sugar, 5 ounces of Cinnamon, half an ounce of Cloves, 4 ounces of Ginger, and a pennyworth of long Pepper, 2 pennyworth of Coriander seed; bruise them, then steep them in the Wine, and let it be close covered, and one quart of the best Sack, put them in and stir them well together; then run it very well 4 times through the Bag till you see it fine, give your Vessel a scent, and put it therein.

7. *To make Bastard White.*

**P**UT 4 or 5 gallons of Milk into your Butt or Pipe, beat it well, and give it a Pearl of whites of Eggs, and it will fall fine.

8. *To make a Butt of Muscadine.*

**T**AKE the Lags of all sorts, and put them into Muscadine Butt, and be sure your Lags do not prick; put thereto one or two gallons of Soot, beat it up and so let it lie; but if you want Soot, the Syrup of Bastard is as good or better; four pound will serve to a Butt.

9. *For Claret that hath lost his Colour.*

**F**ILL it up with Red-wine, and rowl it well, and lay it upon the Bung all night, lay Gravel upon in the morning.

10. *For White-wine that is lumpish and lowring.*

**T**AKE a pound of Roach-alum, burn it and beat to powder, and the whites of 6 Eggs; beat the and the Alum in a gallon of the same Wine, with handful of Bay-salt; it will be fine by morning.

11. *A Flavour for a Pipe of Canary.*

**T**AKE 10 ounces of Torsli, 10 ounces of Limon, 10 ounces of Coriander-seeds, let them be beaten very small, and put into a little Bag; then take a little Civetwater, and put it into a little Fruit-dish on a Chafin-dish of Coals, and make the Water lukewarm; then take your Bag, and dip it in till it hath drank up all the Water; hang it into your Pipe 2 foot, and when you think by your taste its enough, take it out, and it will serve for another.

12. *To make an excellent Scent.*

**T**AKE 4 ounces of Brimstone, a little Alum, a spoonful of Aqua-vitæ, mix them together; when you have done, take a new piece of Canvas and dip therein, and have in readiness the powder of Antugus, 8 Cloves, 2 Races of Ginger, Orange-peel, and a little Coriander-seeds, well beaten together; then cast them upon the Canvas while it is warm, so keep it in a dry place.

13. *The best time to taste Wines.*

**W**HEN the Wind is East-ward, for when the East-winds blow, the Wines begin to move themselves, shewing what they are in goodness or badness.

14. *For Spanish Wine that will not fine.*

**T**AKE half a peck of Collis Tauta, and put it into the Vessel, let it be well beaten together; let it stand then and it will be fine.

15. *Another for the same.*

**T**AKE 12 Eggs new laid, and a pint of Conduit-water, and a handful of Baysalt, beat them well together, and put them into your Vessel; then beat them well again and it will fine; but let not the Vessel be unfilled.

16. *For whitening of a Butt of Sack.*

**T**AKE 5 or 6 gallons of Milk, four handfuls of Baysalt, draw some of the same Wine, and put them into the Butt together one hour; and when the Lees are fallen rack it, otherwise it will fret and  
11. boyl.

17. *For*



17. *For high Country Wines.*

**R**ack them off their gross Lees within a week after they are fallen; and if they are brown, put a gallon of Milk into your Hoghead, and a good scent; let it be always filled, and your Wine will keep the better.

18. *For White-wines that Fret.*

**D**raw 6 gallons, and take a handful of Bay-salt and a gallon of Milk, a handful of Flower and the whites of 6 Eggs; then beat these very well together, and give it a good scent; put these into the Vessel, and rack it at 4 or 5 days end.

19. *For Spanish Wines that prick.*

**T**ake a handful of Rosemary at the Bung-hole of your Vessel, bruise it before you put it in, and let it hang in the Wine till it be without pricking.

20. *To make Malago for a need.*

**T**ake a Hoghead of green Sherry, and 3 pound of white candy Syrup; beat these in the Wine, give it a Pearl, and put it into your Vessel, and draw it for good Malago.

21. *For Sack that hath lost its Colour, or is musty.*

**T**ake a quart of Barley meal, the whites of 20 Eggs, half an ounce of Cloves well beaten, and a pot-tle of the same Wine; beat them and put them into your Wines, so let it rest with Vent, and it will be pursued.

22. *To preserve Malmsey.*

**I**f it fade, put it into the Vessel 20 ounces of moss; then rowl your Vessel, and let it rest, and stop the Vent, and so it shall remain perfectly good to the end.

23. *For a Pipe of Sack that is long.*

**T**ake a pound of Roach-alum, beat it well, and mix it with some of the Wine; then put it into the Butt, and beat it well, and when it is fine, rack it, and this will help it.

24. *To help the boyling of Gascoign-Wine.*

**I**N Summer take a Hogshead, wash it clean and scent it well, be sure your Scent be very fine from the Lee, the foul Lee makes it boyl; take a handful of Pebble-stones, and those will help it.

25. *To make a Pipe of Allicant.*

**T**AKE a Pipe and wash it very clean, and take a Hogshead of high Country Claret that is sweet and fine, and rack it into the Pipe; then take 8 gallons of Soot and put to it, and beat it as you do Muscadine; before you put it in, take 8 gallons of Sack, and the rest of any Laggs of Claret; if it be not deep enough, you may put Red-wine into it; if not sweet enough 2 gallons of Honey, and beat it till it have a Pearl, and fill it into the Pipe; let it stand till it be fine, then rack it into another Pipe; then take 20 ounces of Anniseeds, bruise them and put them into a Bag in at the Bung, and there let it be 12 or 14 days; then take it out, and it will serve very well.

26. *For Claret that is Tawny.*

**T**AKE a pound of Turnsole, and steep it in some of the same Wine 24 hours; then put it into the Hogshead through a Catch, beat it, and it will make perfect white.

27. *If Red Wines be dark.*

**P**UT into the Vessel a gallon of Milk, then take as much Turnsole as you did before to your Claret, and use it as above-said.

28. *How to make 10 Gallons of Hippocras.*

**T**AKE 10 ounces of Cinnamon, as much Ginger, 5 ounces of Long Pepper, and 5 of Nutmegs, of Cloves 2 ounces, as much of Caraway-seed; beat all these together, and lay them in steep 24 hours in the Wine, the first half being Malago, the other White-wine; stir them well together, and let the Wine run through a Cloth; take a pound of powder'd Sugar, then run a pottle of Milk through the Bag into

into the Wine; when it is fine, put it into your Rundlet, and give it a scent, and it will keep a quarter of a year.

29. *To make Scent.*

**T**Ake a flat earthen Pan, put into it two pennyworth of Brimstone beaten small, and a pennyworth of Aqua-vitæ; put it over the fire, and when it is ready to boyl, let it run through a linnen Cloth, and let it be cold; and add a pound of Coriander-seed, Nutmegs, and long Pepper beaten, and these will make a good Scent for any Wine.

30. *How to make 10 gallons of Soot.*

**T**Ake 6 pound of Honey, and a quarter of a pound of Liquorish, when the Bark is taken from it; beat it in a mortar with 2 pennyworth of long Almonds, and boyl them in a Kettel stirring them well; and when it is cold, strain it, and put it in to a Rundlet, and draw it with your Sack or Gascoign Wine, and it will be pleasant enough.

*The End of the Third Book.*

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## The Fourth Book.

### 1. *For White-wine that is faint and hath lost its Colour.* 3

**R**ack it from its Bed, and if you have any Connick-lees, you may put your faint or tawny Wines upon them; then rowl them over, or beat them twice a day, and within 10 or 12 days you may rack it off, and you shall have it brisk and white.

#### 2. *Another for the same.*

**T**ake your Wine and rack it from its Lees; then take a pint of Roach-Alum, the whites of 6 Eggs, a handful of Salt, and a quartern of Bean-flower, or a pound of Rice, and a little Conduiw-water.

#### 3. *To make White Lags.*

**T**ake a clean Rundlet that will hold the quantity of them, and beat them with a Pearl made of Eggs, Bay-salt and Roach Alum, and whiten them with some Milk, and if you will, put some Canary in them, and it will draw very well.

#### 4. *To make your Claret lose Lags.*

**D**raw them into a Rundlet, put to them some Red-wine, as much Turnsole as will make it bright; beat it with as much Alum as will serve for the quantity of the Wine, and when it fines, you may draw it away with what you think good.

5. *Another for making of white Lags.*

**I**F you have any white Lags, rack them upon half a Butt of Malago and Canary Lees; let them lie about 3 weeks, and beat them up every other day upon those Lees, till you have gathered the strength thereof; let them abide thereon till they begin to fine, then rack them into a clean Cask, and give it a strong scent, and if it be brown, white; if not, give it a good Pearl, and when it is fine, you may draw it as you see good.

6. *For Claret that hath lost its Colour.*

**I**F his Lee be good and sound, overdraw him 3 or 4 gallons; then fill him up with good Red-wine, and rowl him well up in his Lees, and let him lie all night upon his Bung, and in the morning lay it up right, and let it rest till it be fine; then shall you have it well coloured.

7. *For Claret that is faint, and hath lost its Colour.*

**R**ack it into a fresh drawn Hogshead upon the red Lees; then take 5 pound of Turnsole, and steep it in part of the Wine; then wash your Rapes clear out, and put it in the Hogshead, with a pound of the best Alum; rowl them well together, and your Wine will be brisk and bright.

8. *For Red-wine that is faint, and hath lost its Colour.*

**R**ack it upon a fresh Lee of Allicant or Red wine; then take 3 pound of the best Turnsole, steep it in some of the same Wine, and when it is well steeped, wring it out, and put the Wine coloured into a Rundlet until it be fine; then draw it off, and put it into your Hogshead, and it will make it perfect and bright.

9. *Another way for the same.*

**T**ake half a bushel of Elder-berries when they be full ripe, pull them from their stalks, bruise them and preserve them, and put the juice of them (when you have occasion) into your Red wine, and it will make it drink brisk and bright.

10. *To rack Rhenish Wine.*

**R**ack your Cask very clean, and let it remain full of water all night, and the next morning draw it clean out, and put a good Scent into it, and it will make the Wine fret and boyl; then if your Wine be hard, take 8 or 10 gallons of Clarified Honey, with a gallon or two of Milk, as you shall see good, beat it strongly; if it be lumpish, give it a Pearl, and it will do well.

11. *To make Rhenish wine.*

**T**ake a Hoghead of *Rochel*-wine, Scent it with a very strong Scent; then take the whites of 8 or 10 Eggs, Bay-Salt or Conduit-water; then take 10 or 12 gallons of Clarified Honey, take 60 or 80 pounds of Sugar; then stop it up close after you have beaten it well, and you shall have it perfect, fine and good.

12. *For Sack that is lumpish or long.*

**T**ake the whites of Eggs, Bay-Salt, Roach-Alum, and 2 quarts of Bean-flower or beaten Rice, beat them together; if brown, use Milk; if white, use all these together; then blow off the froth, and lay a piece of Tyle over the Bung; then let it lie till it be fine; afterwards rack it off, with a good Scent, and it will drink very well.

13. *Another way.*

**T**ake a Hoghead of Sherry-Sack, and 40 pounds of Canary Syrup, it will cost you 9d. a pound; then take a half Tub; then draw some of your Wine, and beat it with a short stubbed Broom; then put it into your Hoghead, with Milk to whiten it; then beat it up with a Pearl, and if you sweeten it, you may draw it for Malago or White Bastard.

14. *A Flavour for Sack or Bastard.*

**T**ake half a pound of Aniseeds, a pennyworth of Ginger, Cloves, Grains, Long-Pepper and Liquorish, of each a pennyworth; beat them, and hang.



hang them in your Wine in a linnen Bag, until the Wine taste enough of the flavour ; then take it out.

15. *For Bastard that pricks.*

**R**ack it upon a good Muscadine-Lee ; then take 3 gallons of the best Ale, and 2 or 3 of the best Almonds ; then fill it up with Bastard Canary, or Sherry of Bastard, mix'd with your Lags, and it will draw for Bastard or Muscadine.

16. *Another for the same.*

**T**ake 5 gallons of clarified Honey, and put it into your Cask, and beat it up with a Pearl of whites and yolks of Eggs, and let it rest.

17. *For Spanish-wines.*

**F**OR Sack that hath lost its Colour, and hath a flying Lee, make a Plea of whites of Eggs, Bay-Salt and Conduit-water, and Milk, so much as you shall see good, beat all these together ; then fill it up, and blow off the froth very clean, and it will be white and good ; and if you would keep it long, you must rack it into another Cask, and it will not then flower nor be ill-conditioned, for Milk will make it so.

18. *Another for your Rhenish-wines.*

**T**ake a good handful of Firr beaten to powder, as much Juniper, with the juice of 2 or 3 Lemons, and a few Cloves ; beat all these together, and bruise them in your Wine till it taste strong of the Flower ; then take it out, and draw it as you shall see good.

19. *For Allicant that pricks.*

**T**ake 2 or 3 Cans of brown Bastard, the sweetest you have, and a pound of Turnsole, and wash out the colour, then put it into your Wine ; and if it be hard, then put in some more Bastard ; if it be tawny, put in more Turnsole ; or for want of Bastard, cut of clarified Honey as much as will serve.

20. *To part a Butt of Muskadel.*

**D**Raw half your Wine into another Butt ; then take your Lags of all sorts that do not prick, and so much Syrup as will not prick ; then take your Part and beat them up, and let it rest after you have blown the froth from off it.

21. *The Flavour of your Muskadine.*

**M**Ake a Bag of linnen Cloath, about a foot long ; then take 4 ounces of Coriander-seed, 20 ounces of Ani-seed, 10 ounces of Allamus alamatus, one ounce of Cloves, one ounce of Ginger, a little handful of Sanders, a little Musk or Ambergreese ; bruise all together, and put them into the Bag, and let it hang in the Wine till it hath given a flavour ; then take it out and let it rest ; or you may put in 3 grains of Musk, and some Cyprus, according as the quantity of your Wine is.

22. *How to use a Butt of Sack when it is musty.*

**T**Ake a gallon of Lime, and beat it small, and put it into the Butt ; then take a Staff and beat it, and let it stand a day or two.

23. *For Claret that hath lost its Colour.*

**T**Ake a pennyworth of Damasons or Bullace, or more as you see good, and stew them in Red-wine, and make a pottle of Syrup or more.

24. *To make brown Bastard.*

**T**Ake the Lugs of Claret and White-wine, and put them into your Cask with your Lugs of Spanish-Wine ; and before it will prick, take 40 pound of Bastard-Syrup, and mingle it well with some of the same in a half-Tub ; then put it into your Cask, and beat it up with a Pearl of Whites and yolks of Eggs, and let it rest.

25. *A Receipt for a Muskadel that pricks.*

**M**primis, For two pennyworth of Grains, as much of Storax, Benjamin and Musk fere.

26. *A*

26. *A Receipt for Sack that pricks.*

**I**mprimis, For Orras-powder, take half an ounce of Ani-seeds, 3 pennyworth of Spanish-white, pennyworth of Rose-water, and Alum boyled with the Rose-water, and so take it and put it into the Butt.

27. *A Receipt for Sack that will not fine.*

**T**Ake 2 pennyworth of Rice, and beat it up very small, and 2 pennyworth of Alum; this will keep your Wine from quarrelling, and make it fine.

28. *How to help Wine that hath lost Colour and Strength.*

**T**Ake 6 quarts of new Milk, the Cream being taken off, the whites of 22 Eggs, a handful of Bay-Salt, a quart of fine white-Flower, and 2 pennyworth of Roach-Alum; beat these things a long space, and put them into the Hogshead; 2 pound of Stace will do well.

29. *To give Sack Strength, if it lack and grow faint.*

**M**ake a Match of Ani-seeds and fine Fennel-seeds, a little Brimstone, with a little quantity of Long-Pepper beaten not too small; put it into a linnen Bag that will go in and out at the Bung-hole, then stop it up close for the space of six or eight days.

30. *A Receipt for the Crisp.*

**G**inger and Cinnamon, of each 3 ounces, Cloves 4 ounces, Nutmegs 10 pennyworth, Coriander-seed two ounces, Carraway-seeds eleven ounces, Calamus two pennyworth.

31. *A Note for Wines, and what Countrey.*

**T**HE Wines of Bourdeaux are called Jasterre; you shall know them by their small Hazel-hoop, and likely they be full gage.

<sup>32.</sup>  
Then there are high Countrey Wines, and they come not till *Christmas*, for if they do they are forfeited; you shall know them by their Willow-hoops, and they most commonly want of gage.

<sup>33.</sup>  
Then have you *Galliack* Wines in Pipes and Hog-sheads, and they be high coloured, and 3 quarters bound, and lack of gage 2 Testers.

34. *A Remedy for the same.*

Wash your Cask very clean, and let it be all night full of Water, and the next morning draw it clean out, burn a good Scent in it, and it will make your Wine fret and boil; then if your Wine be hard, take 8 or 10 gallons of clarified Honey, with a gallon of Milk or two, as you shall see fit, beat it strongly; if it be lumpish, you may give it a Pearl, and it will do well.

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*The End of the Fourth Book.*

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The first part of the book is devoted to a general discussion of the theory of the firm, which includes a chapter on the theory of the firm and a chapter on the theory of the market.

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3 no. 100 of the French Book

